# Northam Park Athletic Fields and Tennis Study

September 23,  2021

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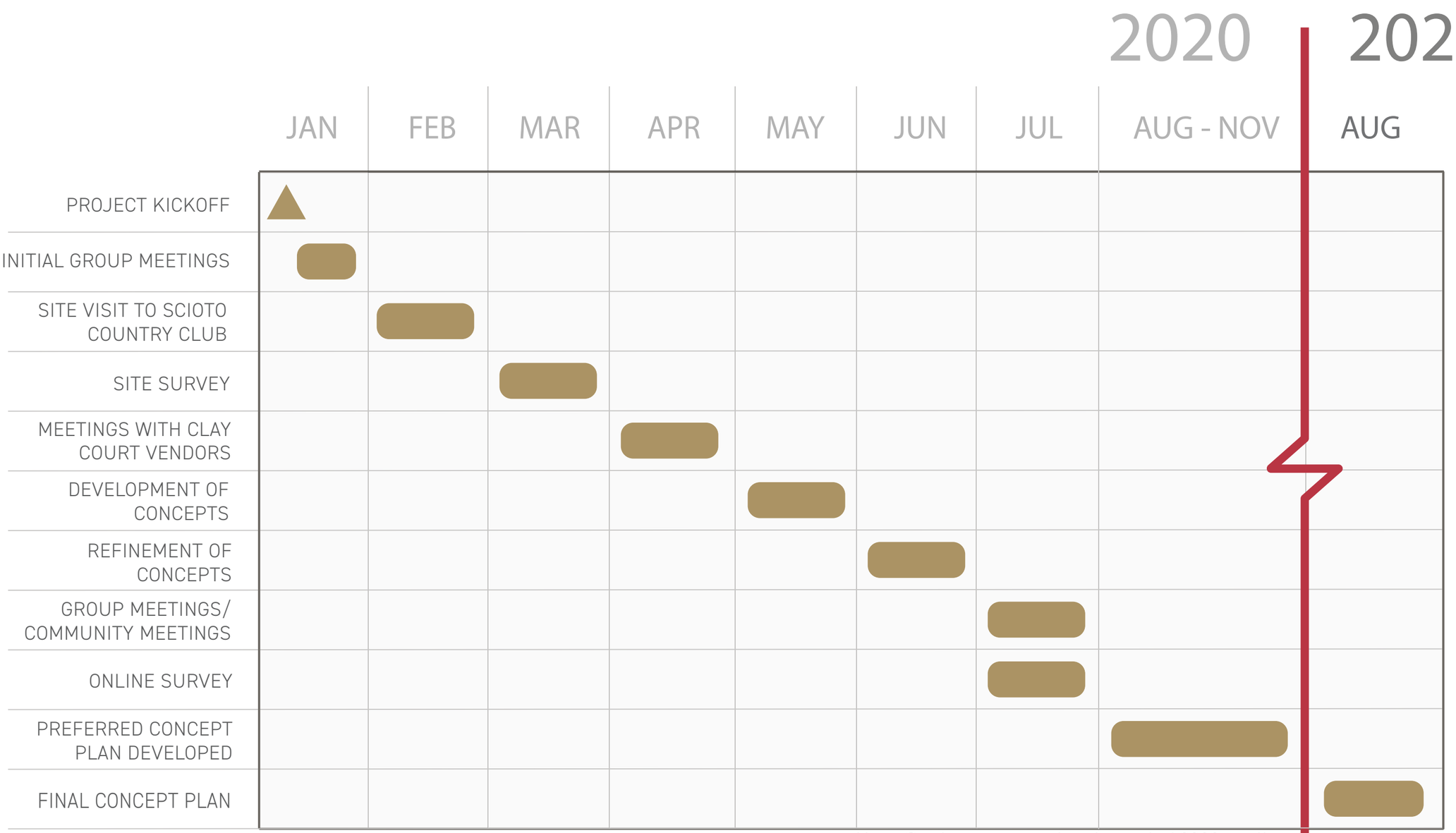



Note: Study was paused at the end of 2020 to allow for the completion of the master drainage plan.

# Introduction

The 2018 Parks & Recreation Comprehensive Plan was developed to serve as a guiding document for future decision-making on how to get the most value from the City's limited parkland and the facilities within them, while fulfilling the recreational wants and needs of residents. The plan made several recommendations for potential improvements at Northam Park that were not previously included in past-year renovations and upgrades that had included the new Tremont Pool, the playground, Centennial Plaza and parking lot improvements.

In response to these recommendations, the Parks & Recreation Department initiated a project for the schematic design of infrastructure improvements to the athletic fields and tennis court complex, and commissioned MSA Sport to lead this process. Given the well-established nature of Northam Park and existing uses, the intent of this project is not to redesign or reprogram the park but to study and develop a long-term plan for enhancements to those existing athletic and civic facilities already contained within the park that are in need of renovation or replacement.

The study process began in January of 2020 through November of that year (the original timeline was extended as a result of the COVID-19 pandemic). At that time, it was recommended that the drainage and infrastructure strategy and design should be further developed. The Parks & Recreation Deptartment worked with Korda Enginnering for Phase I of the Northam Park Improvments.  As a final step in the study process, MSA has incorporated the infastructure design into this study and provided this "Vision Package" for improvements. This package includes schematic drawings, phasing information and cost estimates.  This document will assist the Parks & Recreation Department as it schedules improvements within the Parks Capital Improvement Program and plans for the future of Northam Park.

The area of the study includes the following elements:

- 12 clay tennis courts
- Park support spaces (office, restrooms/lockers, storage)
- 4 baseball diamonds
- 4 recreational athletic fields
- Walking paths, site furnishings, and other passive uses

# Existing Site Aerial Reference / Area of Study

# Design Study Objectives

Working with the Parks & Recreation Department, the following objectives were identified and developed as the key project goals:

- Study will provide a long term plan with cost estimates and phasing approach for potential park improvements
- Given the well-established uses of the park, the process will focus on renovations or replacement of facilities that support these existing uses
- Study will be mindful of existing trees and other established park amenities
- Study will make recommendations to improve the physical infrastructure of the park
- Study will provide recommendations for improving support buildings

# Initial User Group Meetings

The Parks & Recreation Department identified four key focus groups to engage during the initial phase of the study.

1) Special Events
2) Tennis
3) Northam Park Neighbors
4) Athletics

Each group met separately during the last two weeks of January 2020. The City and MSA Sport provided an overview of the project, discussed the key project goals, and asked a series of questions to obtain specific feedback from each group.

- What is working?
- What is not working?
- What do you want to see happen?

The responses were recorded and included on the following pages.

# 1) Special Events User Group

MSA Sport and the Parks & Recreation Department met with the City and Civic Special Events User Group on Thursday, January 23rd. There were approximately 10 attendees at this meeting, including representatives from UA Civic Association and the Fireworks Committee, and the City Arts Manager. The park currently hosts two (2) major annual special events – the 4th of July Fireworks and the Labor Day Arts Festival. A civic group has also expressed recent interest in reviving a former Chamber event known as the Taste of UA, which had previously been held at Northam Park in early August.

**Question #1** : What works?

- Options for shaded areas are positive. Existing mature trees provide extra shade
- The park can accommodate events / festivals with ease. Arts festival, 4th of July, etc.
- 4th of July (5-8k attendees with 10-15k around park perimeter) – coordination of City, community, and positive weather. Shifted orientation due to typical wind patterns and noise complaints. Fireworks are "barely" working due to constraints. Current accessibility from Northam road works well. Secured perimeter for fireworks equipment/storage. Launch box location and secured perimeter works. Existing paved paths are efficiently dispersed for maximum use. Food truck layout and location works well off the street. Portable restroom distributing works well. Consistent annual operations with same fireworks service provider create ease for future set up
- Arts Festival (20k attendees daily, 200+ artists) – Accessibility for vendors and people during Festivals. Artists can drive up to the tents load/unload. Convenience for food trucks with multiple options for settlement
- Electric and Water Access distributed in several locations
- Open space within the center of the park

**Question #2** : What does not work?

- Lighting is an issue – particularly with same day cleanup at evening hours
- Fireworks cleanup – next morning
- Existing drainage does not work well, as a result, water accumulates on the ground
- Not accommodating for very heavy equipment. Trucks for table/chair rentals, portable stage, fireworks crew parking zone, etc. Creates damage to fields and lawn
- Existing turf is lower grade quality along with poor existing (draining) conditions magnify the damage / wear to the fields
- Power and water locations. Existing locations require undesirable parking for Vendors/Trucks
- Commercial tent company for Labor Day – Tent anchors potentially damage sub-surface infrastructure
- Pool and Tennis open on Labor Day. Parking becomes difficult

**Question #3** : What do you want to see happen?

- Maximize use of Northam Road
- Provide more shade options - Trees, Structures, etc
- Incorporate a permanent outdoor stage/pavilion with utilities as opposed to hauling a temporary one with large associated equipment
- Infrastructure for sound systems
- Lighting - Outdoor athletic sports lighting. Lightning detection system for use by all groups
- Reconsider roles of infields at events (especially if synthetically turfed)
- Reconsider engaging some of the edges and adjacent spaces as part of the "whole" – the public perceives the adjacent properties (St Agatha, Tremont Elementary) as part of the park, even though they are different owners
- Temporary secured storage for supplies.  Currently it's in the concession stands and tennis courts
- Irrigation for the natural turf areas

# 2) Tennis User Group

MSA Sport and the Parks & Recreation Department met with the Tennis User Group on the evening of Tuesday, January 28th. There were approximately 20 tennis representatives in attendance. The Tennis Complex currently operates 9:00am to 9:00pm daily during the season. The season begins the last Saturday in April and ends the last Saturday in October. Membership or daily fee is required to play on the Northam Park Tennis Courts. Memberships are available for residents and non-residents; currently approximately 40% of the members are non-residents.

**Question #1** : What works?

- Location and existing court quantity works well. One of the best rated tennis complexes available to the public
- Cost for membership is very affordable
- Well liked staff and very professional
- Skilled and dedicated tennis population
- Social aspects of the events. Welcoming/friendly atmosphere
- Tennis programs are well received such as youth program. Always new, innovative programs and activities
- Lighting for courts at evening hours
- Whole experience of the tennis courts setting with surrounding trees and central location
- The reputation of the tennis courts in the community and its professionalism that's associated
- Membership increased for the first time in 2019 since 2006. Participation in leagues, casual play and socials is strong
- Restrooms available within the existing support building adjacent to the courts. Great location

**Question #2** : What does not work?

- Current state of restrooms and showers is poor
- Irrigation/drainage system for the tennis courts does not work very well
- Lack of signage/direction for new members or guests
- The existing staff hut/shed is in bad shape
- Need more sheltered areas
- Existing patio upper deck area of the support building gets extremely hot. Consider shading
- Shade trees around tennis courts are a problem, hedges, etc can get in the way of visual cues. Sycamore trees lose leaves early, bark sheds, maintenance concerns. Trees in the center gathering area should also be considered as to what type and configuration of the trees and shade. Maintenance of tree branches hanging over courts is neglected sometimes
- Weed/overgrowth problems on the North and South ends. Moss on South end in shaded areas creates unsafe and displeasing conditions
- Numbering, positioning, and configuration of convenience gates – no gate between 1 and 3
- Existing Curbs on some of the courts are potentially dangerous
- Layout of the courts and lack of fencing/barriers between to stop balls from rolling between across courts

**Question #3** : What do you want to see happen?

- Walking path around the courts within the perimeter of the fence
- Additional storage for tennis equipment, lesson balls, rollers, etc.
- Water fountains provided throughout complex
- Improved landscaping and maintenance of the existing green space in the park
- Improved draining/irrigation. Potentially underground well for water collection
- New court surfacing and striping- even surfacing level, opportunities for new material surfaces
- Additional courts - Tennis complex expansion
- Accommodated seating area next to/between courts with potential shading provided
- New fencing and netting
- New Hitting wall on back side of a court
- Indoor facility capable of operating at all times throughout the year. Also able to hold gatherings for events
- Shading/screens/awning for the elevated deck area
- Bigger kitchen/warming/service area with improved accommodations
- Introductory price for new residents/first timers

# 3) Northam Park Neighbors User Group

MSA Sport and the Parks & Recreation Department met with the Northam Park Neighbors User Group on the evening of Tuesday, January 28th. The City sent out notices to 540 addresses within one block of the park, and approximately 25 people attended the group meeting.

**Question #1** : What works?

- The pool is an excellent improvement. Pool management and pool staff is excellent
- Existing paved paths and sidewalks are efficiently dispersed for maximum use
- Park accessibility - Openness, edges
- Traffic flow (Pedestrian and vehicular)
- Open non-programmed green space within the center of the park, creating large open uninterrupted vertical views
- Park maintenance – friendly, congenial, cleanliness of park regardless after an event
- Optimal locations of existing tennis courts/location with park
- Playground is a positive addition, executed nicely
- Entire athletic complex on the North side by the schools was well received upgrade
- Park identity as a neighborhood park, focused on the family and community
- Benched seating and picnic tables are constantly used throughout. Dining tables near the reading garden are well used too
- Choice of events held at the park
- Park Safety. Police presence after hours. Portable heart defibrillators provided for elderly
- Lighting along Northam Road

**Question #2** : What does not work?

- Reckless driving at the park -unsafe
- Issues with athletes on sports fields using profanity, rude behavior, etc. Park users forget that people live adjacent to park
- People such as motivational speakers (coaches). Loud and disruptive to environment
- Walkways and pedestrian access across Northam Road to the park. Need more safe access ways (crossings)
- No sidewalks in key locations
- With big events accessibility for emergency personel becomes challenging
- Inadequate storage for youth sports. Centralized storage in one central place
- Lighting between Northam Road and library, by the playground is not good (too dark). Also in the access road to St Agatha property line
- Tennis Courts - When windscreens are up it closes off the views of the park. Logistics of the courts - Not accessible to Neighbors, only members
- Existing drainage does not work well, as a result, water accumulates on the ground
- Communication on park use. Lack of clarity on public use
- Not much for kids between ages of 10 and 18. Should be more inclusive
- Existing storm water grates are unsafe for both humans and animals
- Need more trees. Better upkeep of trees including fallen branches and trimming
- Light fixtures on the existing statue need to be adjusted
- Too many activities available at Northam causing congestion particularly with vehicles. Park is over-programmed
- Existing support buildings are getting worn. Bathrooms are outdated and drinking fountains are not working well
- Need more: trash cans, shelters, drinking fountains for pets
- Existing lighting creates light pollution. Difficult for star gazing
- Dog owners not cleaning after dogs

**Question #3** : What do you want to see happen?

- Shelter Space
- No infringement on green space, preserve openness
- Keep all baseball diamonds (4)
- More water fountains
- More benched seating towards Tremont and Northam side
- Consider new sports: Volleyball court, Pickle-ball court, Basketball Court
- Tennis court use without paying member fees
- Include pet waste sanitation stations
- Less fencing around the tennis courts
- No windscreen for the fencing
- Maintenance of the garden near the Northam rock
- More hedges or shrubs for birds/animals
- Map of historic items - listed on plaque, tree grove
- Remove idea of a dog-park and require to be leashed at all times
- Clocks at pool/in park
- Potential boundary between the Church and Park
- Better define the edges and separation of the edges of Northam Park
- More improved attention to drainage and infrastructure
- Better attention to infrastructure

# 4) Athletics User Group

MSA Sport and the Parks & Recreation Department met with the Athletics User Group on Thursday, January 30th. In attendance were representatives from UA Bear Cub Baseball, UA Youth Football, UA Junior Baseball Association, and UA High School.

**Question #1** : What works?

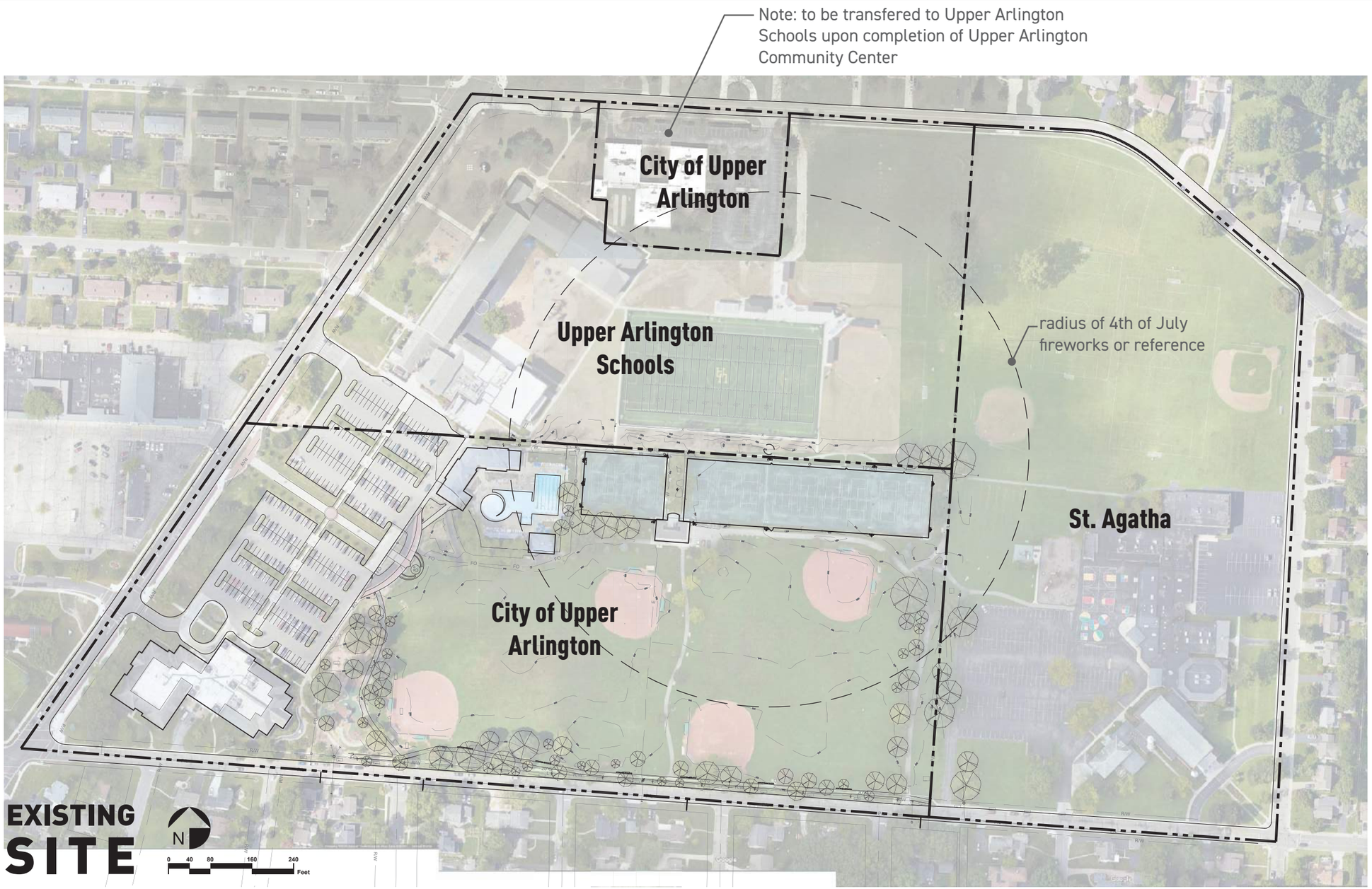
- Park creates a strong sense of community
- Central location of park is ideal and offers countless activities to all age groups. Easily accessible by bike or walking
- Existing partnership between Upper Arlington schools and Park & Rec staff
- Pool, playground, and tennis complex proximity to the park athletic fields
- Existing parking (including parking at St. Agatha) is sufficient
- Baseball Field configuration works well
- Existing storage during athletic season is sufficient
- Concessions for baseball do not share with pool concession so that they can operate simultaneously
- New athletic turf field (school) has been popular among athletes

**Question #2** : What does not work?

- Cross Country routes are unclear
- Drainage/Irrigation on fields, Locations of catch basins are concerning
- Uneven grading and surface density on fields causes safety concerns
- Condition of existing turf is questionable
- No storm/rain shelter available for immediate refuge
- No gathering area for athlete discussion
- Existing storage for equipment is not sufficient
- Baseball - Repairs needed with drainage, signage, latches, bat racks at dugouts. Need higher backstop pads
- No rest time for turf
- Need better ADA access conditions - Shade, paths, restrooms, parking
- Not enough drop-off location or crosswalks
- Provide more shaded area

**Question #3** : What do you want to see happen?

- New shelter to provide gathering spaces and shaded areas
- Training in room with white board
- Provided seating/picnic area
- More storage
- Larger improved restroom (no showers)
- Separation of walking paths and service roads
- Improved draining/irrigation
- Lighting for turf field
- ADA parking availability on Northam Road
- Baseball - Higher backstops
- Reposition/re-orient baseball fields


Note: to be transfered to Upper Arlington Schools upon completion of Upper Arlington Community Center
City of Upper Arlington
Upper Arlington Schools
radius of 4th of July fireworks or reference
St. Agatha
City of Upper Arlington
EXISTING SITE
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Feet

# Community Engagement

Following the User Group Meetings, MSA Sport began to develop multiple design concepts without re-programming the existing site. These concepts were reviewed and discussed with the Parks & Recreation Department.

The design concepts focused on providing options for several aspects:

- Tennis court layout
- Ball and recreational athletic field layout
- Service building floor plan and flow
- Site feature/Amenity considerations

The design concepts were reviewed with the User Groups.

During the summer of 2020, a Public Community Meeting was held on an online platform. The meeting included an overview of the objectives of the study, review of the feedback from the user groups, and a presentation of design strageties. Options were given with live polls to obtain feedback. This meeting had approximately 50 participants.

The same information was made availabe in an online survey, with the same design options provided. The online survery received an addititonal 450 responses.

The design concept stragegies are included on the following pages.

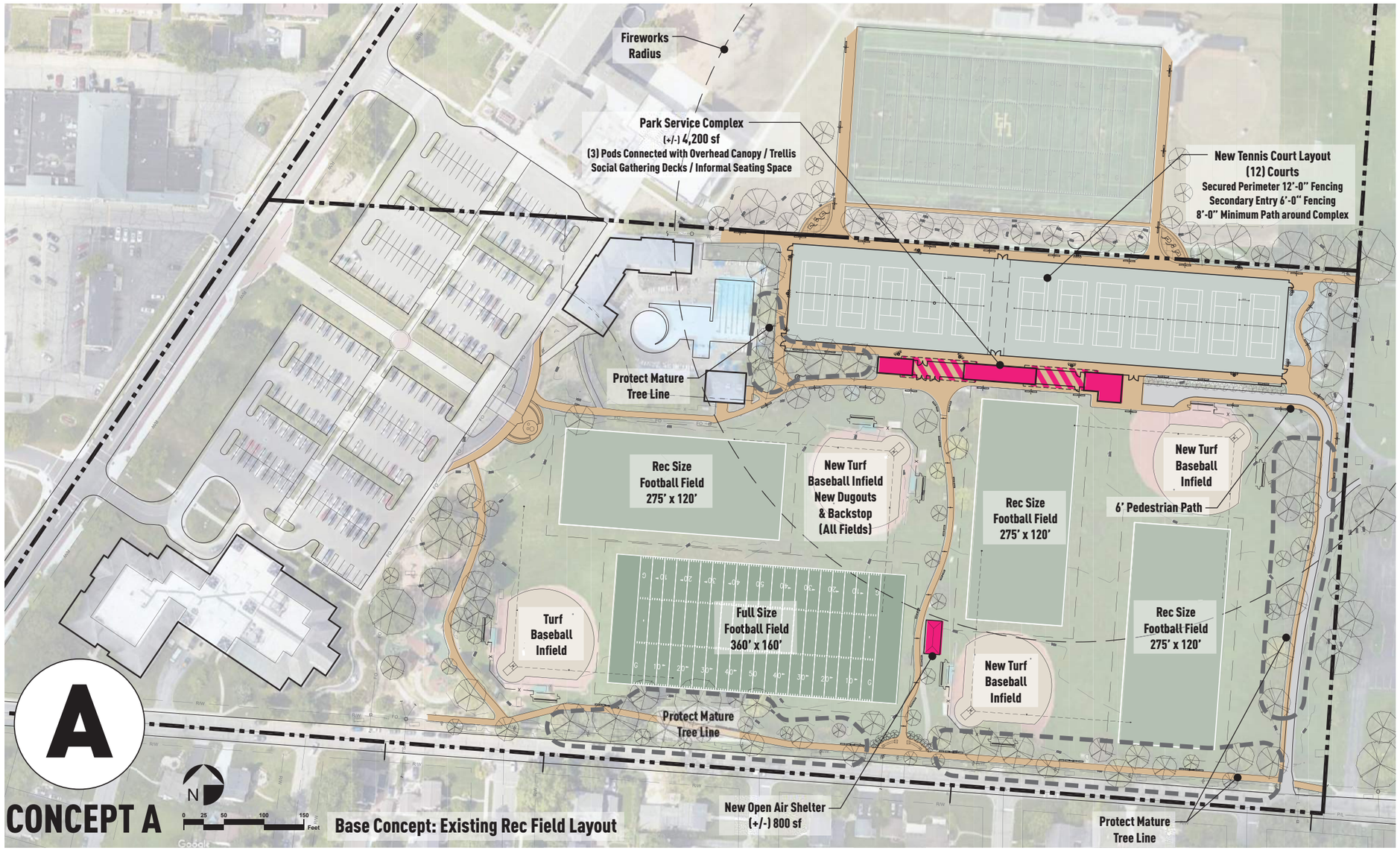
# Concept 'A'

- New turf infields are proposed at a similar orientation and location as what is currently existing.

- Athletic fields are laid to be parallel and more aligned with the ball fields. Typical with every concept.

- The proposed tennis courts are 'Western justified' providing more buffer between the tennis courts and church property.

- An open air shelter is added to serve the athletes as well as other typical uses for the park.

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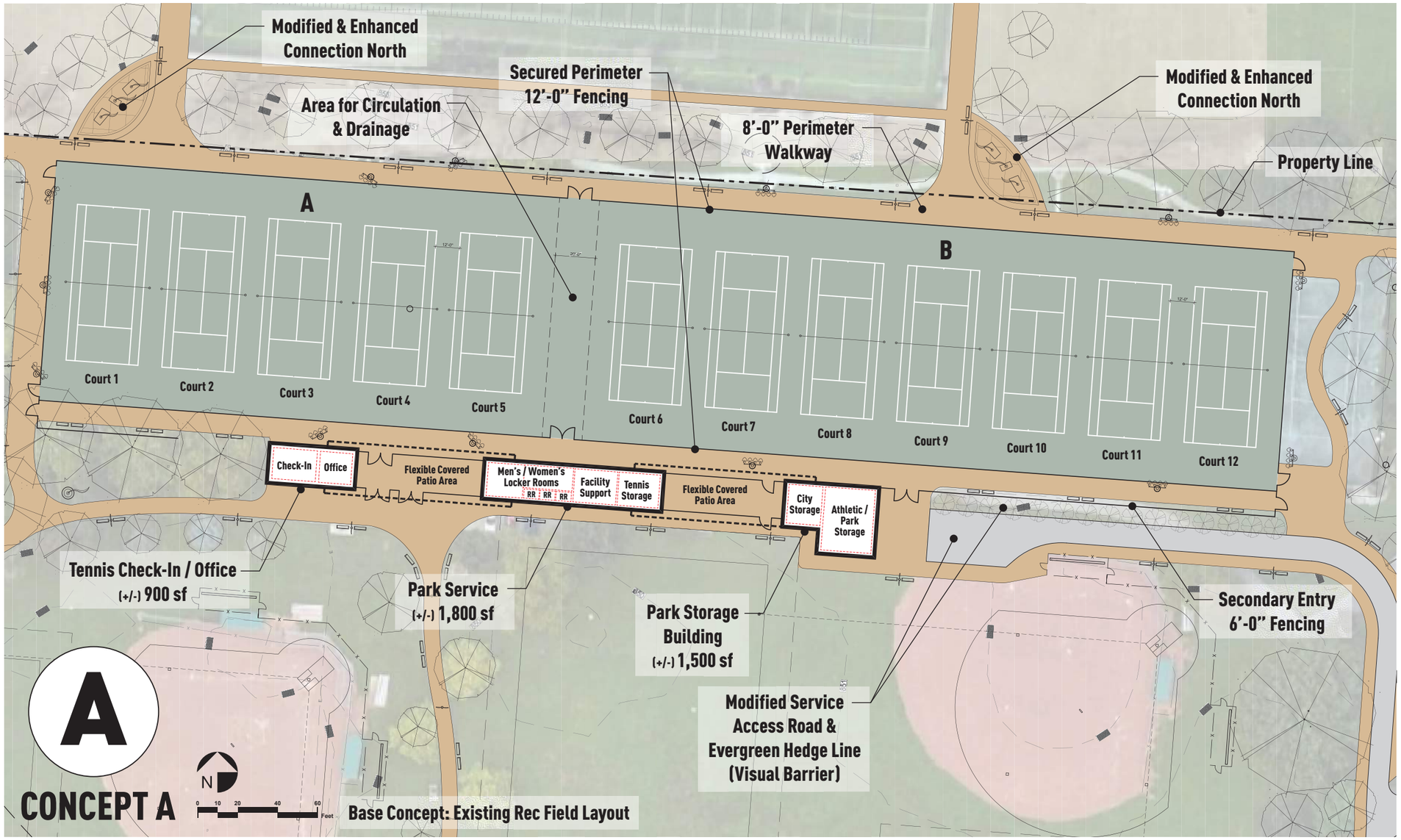


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## Concept 'A' Enlargement

A small size central plaza similar to the existing is proposed to be next to the service building. The service drive is modified as needed and a short new hedge line provides screening.

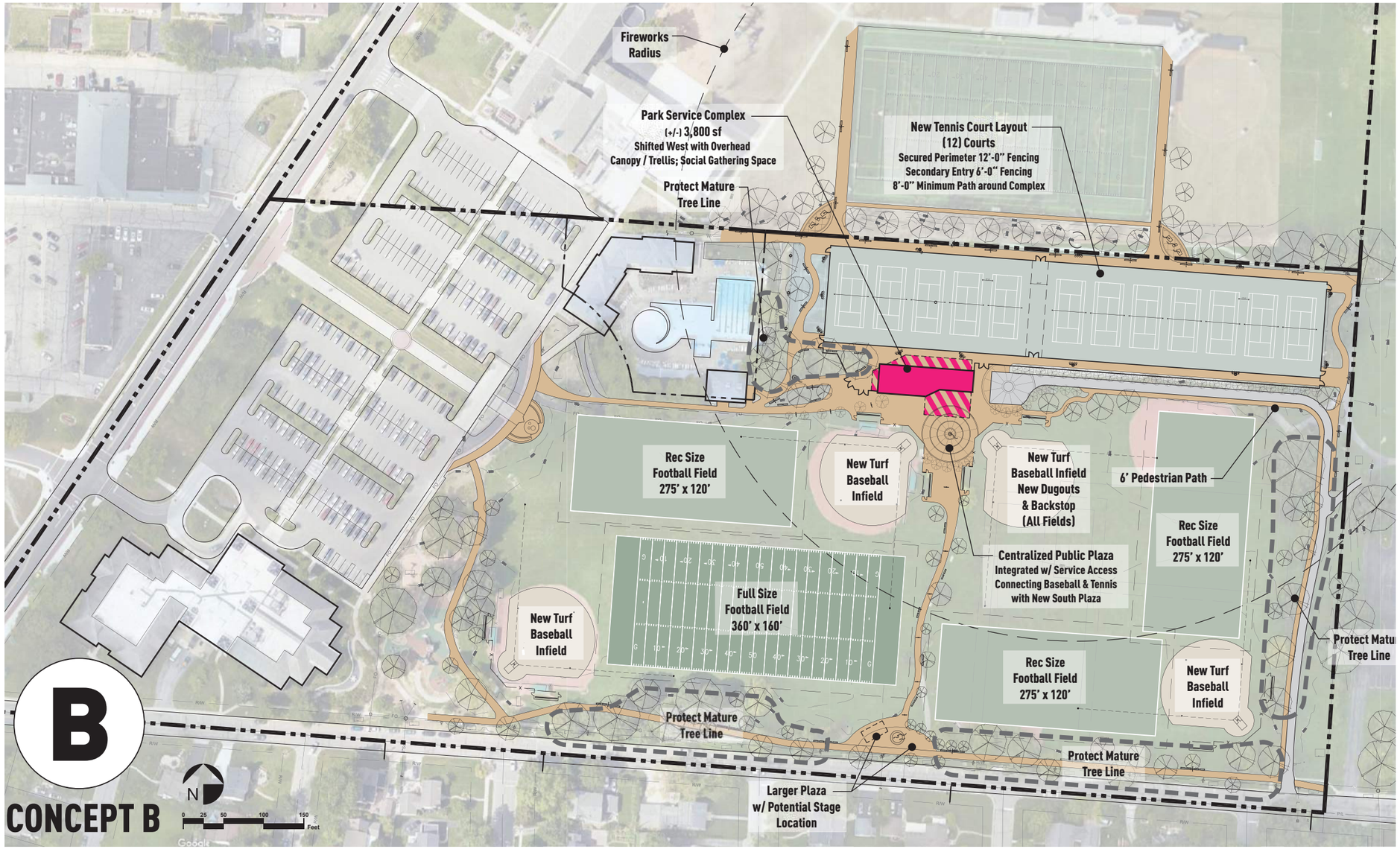
# Concept 'B'

- New turf infields are proposed at a similar orientation and location on the West side of the existing N/S path that runs in the center of the park. The other infields are switched diagonally.

- Athletic fields are laid to be parallel and more aligned with the ball fields. Typical with every concept.

- The proposed tennis courts are 'Eastern justified' providing more buffer between the tennis courts and pool.

- An enlarged south plaza is included - this can fit a temporary stage for special events.

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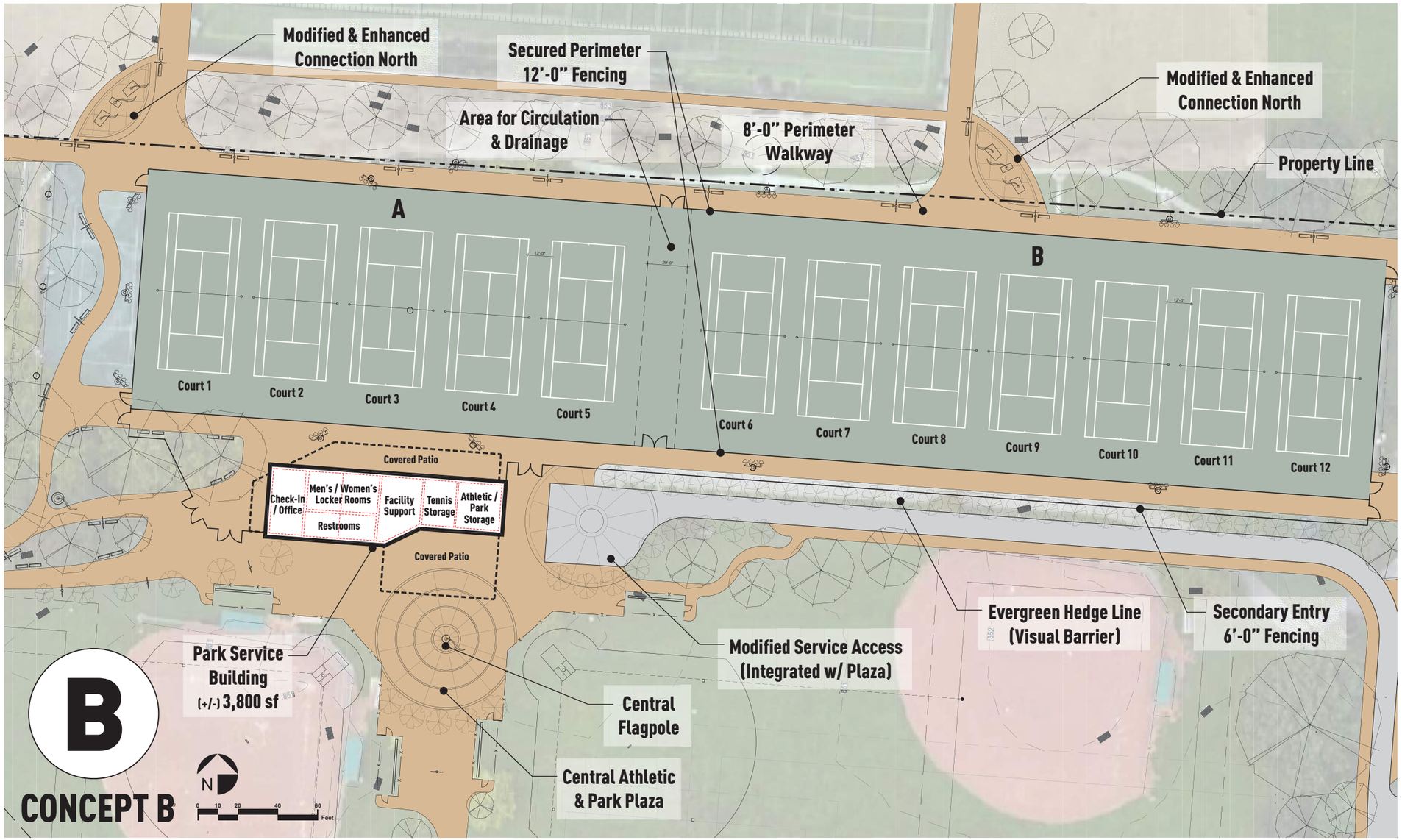


## Concept 'B' Enlargement

A large size central plaza is provided next to the service building. The service drive is modified as needed and additional landscaping is provided along the south side of the tennis courts.

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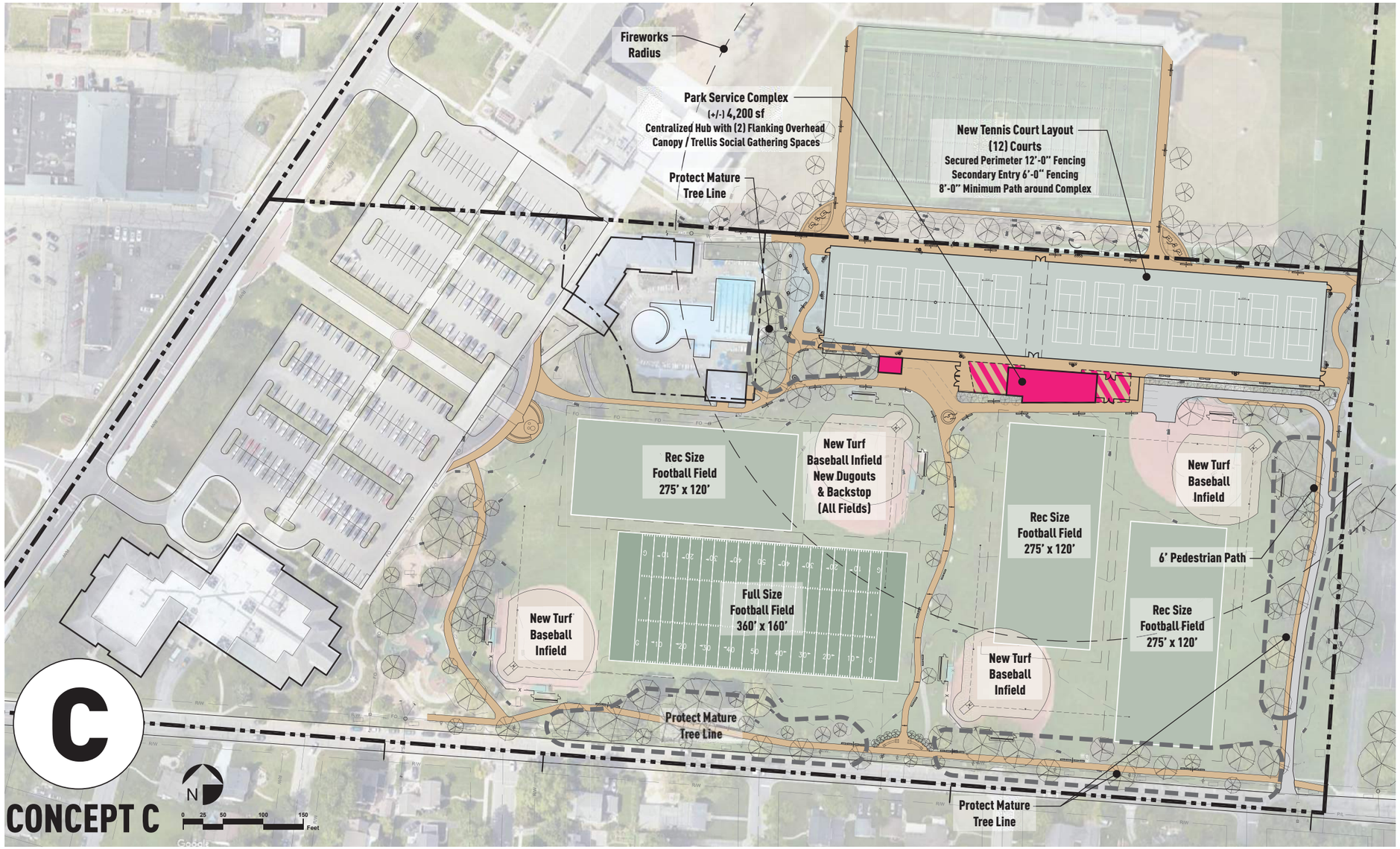
# Concept 'C'

- New turf infields are proposed at a similar orientation and location as what is currently existing.

- Athletic fields are laid to be parallel and more aligned with the ball fields. Typical with every concept.

- The proposed tennis courts are 'Eastern justified' providing more buffer between the tennis courts and pool.

-No new park amenities such as the enlarged plaza or open air shelter are included in this option.

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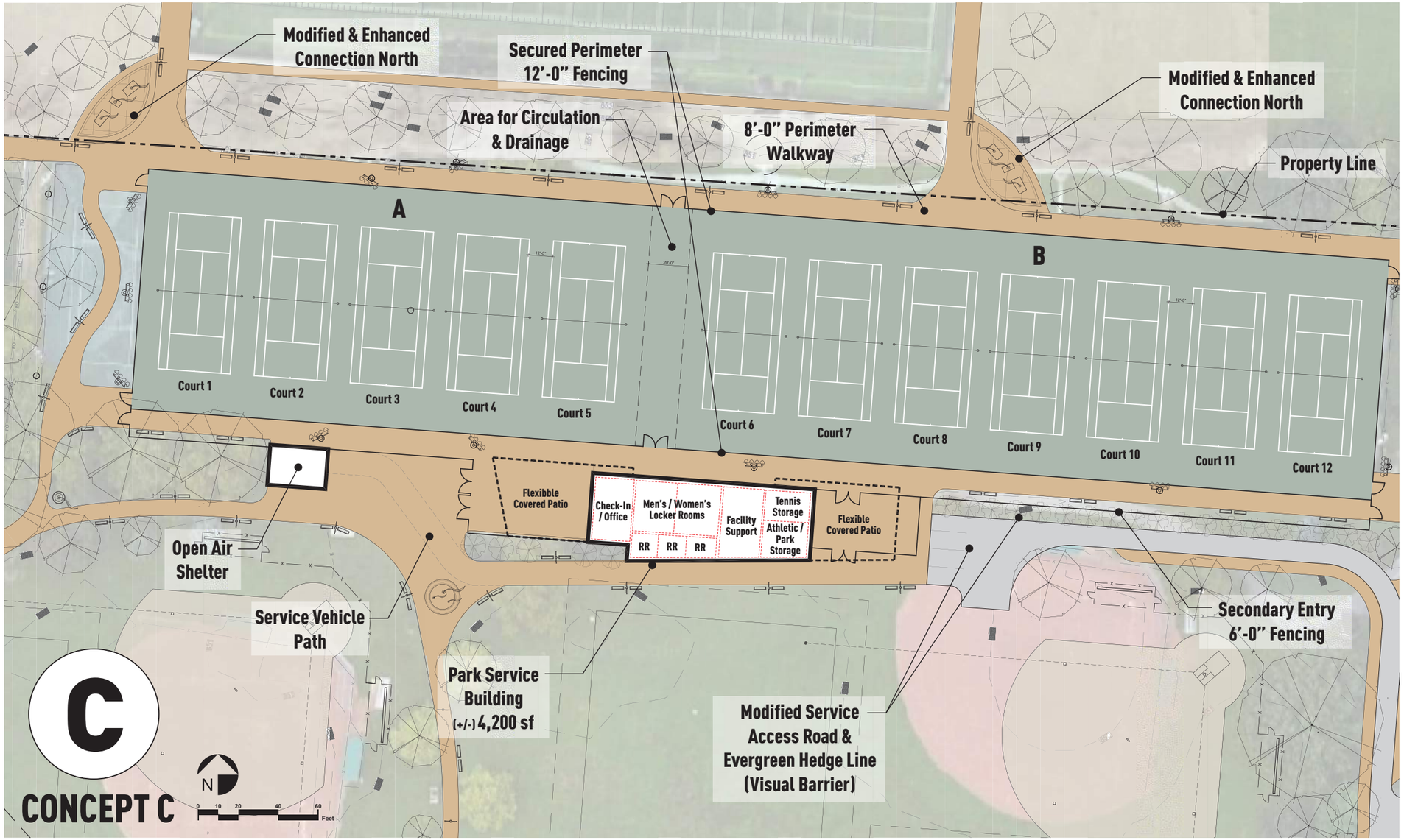


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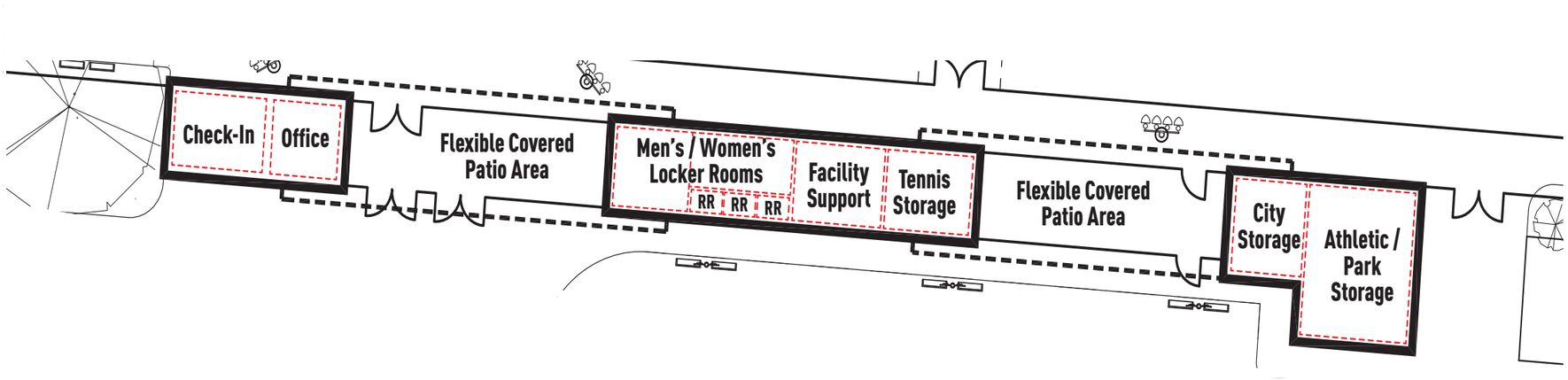
## Concept 'C' Enlargement

A medium size central plaza is proposed next to the service building. The service drive is modified as needed and a new landscaping is located along the tennis courts.

# Park Service Building

## Concept 'A'

This layout contains several building pods that create spaces in between that can be utilized as flexible covered patio areas.

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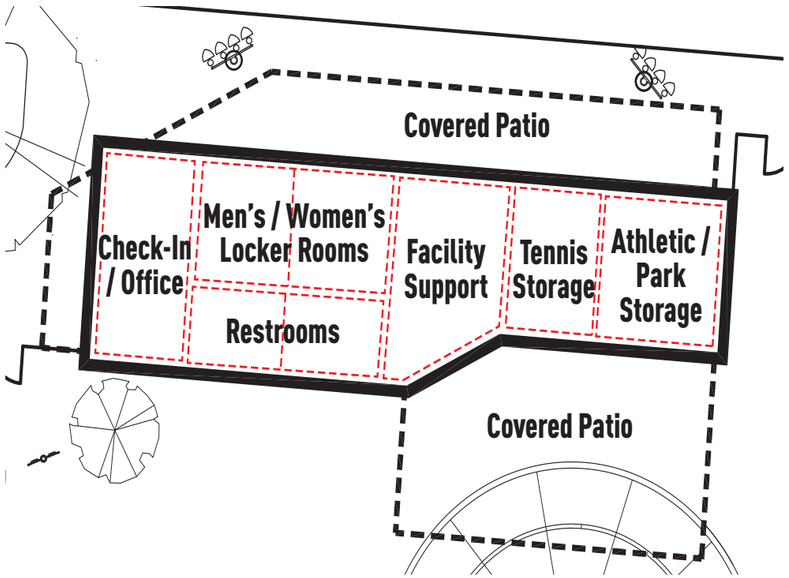
## Park Service Building
## Concept ‘B’

This option compacts all the programming into one building and has flexible covered patio areas serving the North and South sides.

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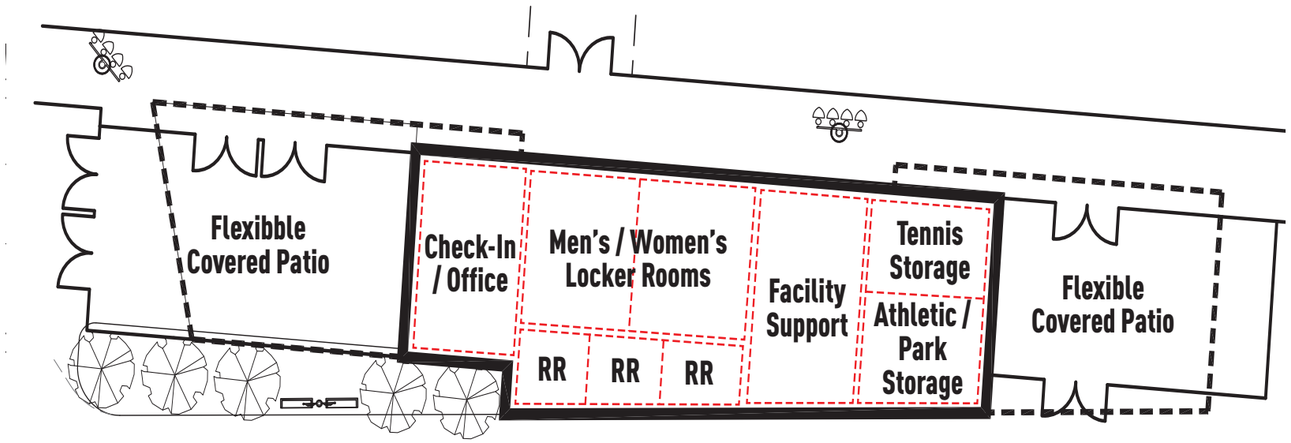
## Park Service Building
## Concept ‘C’

This is similar to Option B, however, it is more linear and the flexible covered patio areas are designated to the East and West sides.

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# Survey / Poll results & Comments

After presenting the three concepts, a live poll as well as an on-line survey was conducted to see general preferences. Comments were also received.

**Question No. 1** *Which park service complex do you prefer?*

**A.** Concept 'A'
**B.** Concept 'B'
**C.** Concept 'C

Based on the on-line survey that 400 individuals took

70 **(17.5%)** preferred option **A**
184 **(46.0%)** preferred option **B**
146 **(36.5%)** preferred option **C**

Based on the live poll that 43 individuals took

10 **(23.3%)** preferred option **A**
20 **(46.5%)** preferred option **B**
13 **(30.2%)** preferred option **C**

**Question No. 2** *Which athletic field concept do you prefer?*

**A.** Concept 'A' and 'C'
**B.** Concept 'B'

Based on the on-line survey that 368 individuals took

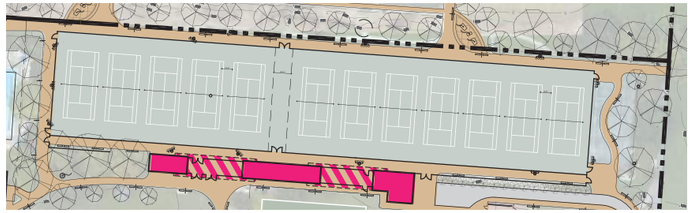
195 **(53.0%)** preferred option **A**
173 **(47.0%)** preferred option **B**

Based on the live poll that 42 individuals took

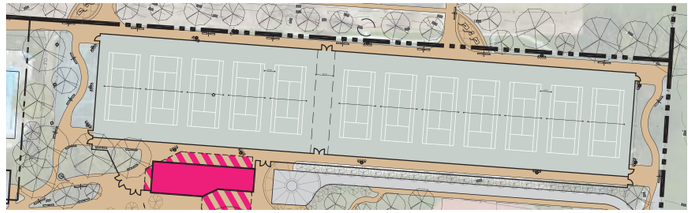
10 **(23.8%)** preferred option **A**
32 **(76.2%)** preferred option **B**

**Question No. 3** *Which tennis court layout do you prefer?*

**A.** Western Justified



**B.** Eastern Justified



Based on the on-line survey that 351 individuals took

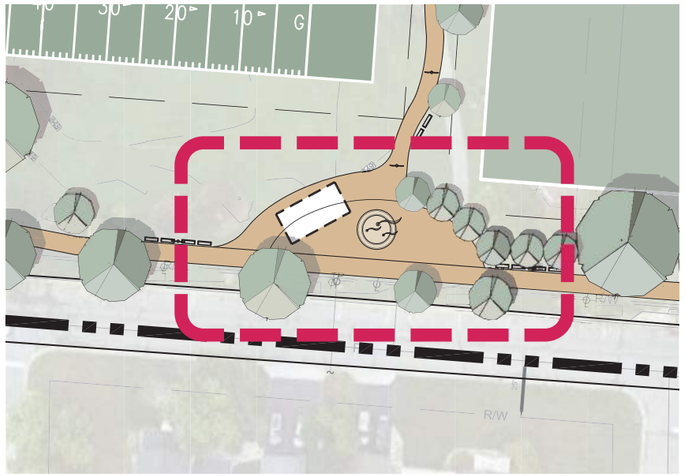
146 **(41.6%)** preferred Option **A**
205 **(58.4%)** preferred Option **B**

Based on the live poll that 45 individuals took

8 **(17.8%)** preferred Option **A**
37 **(82.2%)** preferred Option **B**

**Question No. 4** *Do you prefer an enlarged South Plaza?*

**A.** Yes
**B.** No




Based on the on-line survey that 408 individuals took

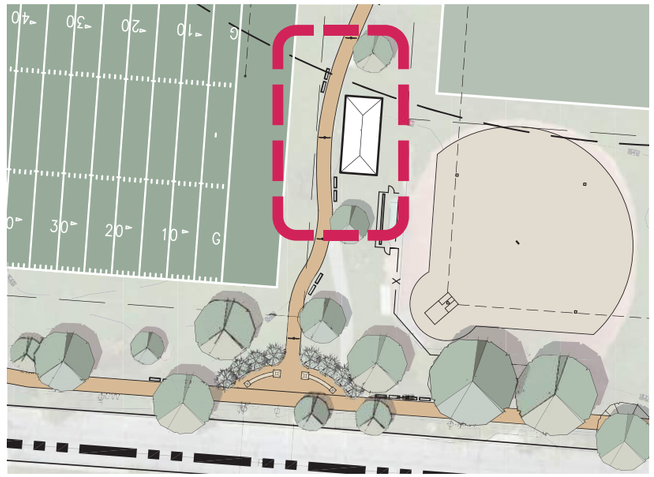
250 **(61.3%)** preferred Option **A**
158 **(38.7%)** preferred Option **B**

Based on the live poll that 48 individuals took

27 **(56.3%)** preferred Option **A**
21 **(43.8%)** preferred Option **B**

**Question No. 5** *Do you prefer an open air shelter?*

**A.** Yes
**B.** No




Based on the on-line survey that 410 individuals took

313 **(76.3%)** preferred Option **A**
97 **(23.7%)** preferred Option **B**

Based on the live poll that 48 individuals took

33 **(68.8%)** preferred Option **A**
15 **(31.3%)** preferred Option **B**

## Comments Summary

1. Need to address storm-water / drainage

2. Maintain the passive park setting
   - Keep it natural
   - Preserve mature trees
   - More trees / landscaping
   - Provide areas for passive recreation (Frisbee tossing, dog walking, etc)
   - Need more seating /site furnishings (Tables, benches, trash bins, bicycle racks)

3. Need better turf and landscape maintenance

4. Walking
   - Provide more pedestrian paths including on north side
   - Paths should be curving and natural

5. Northam shared use path comments
   - Most of the comments are related to items on contractors punch list to be corrected. (Grading / seeding issues, alignment issues)

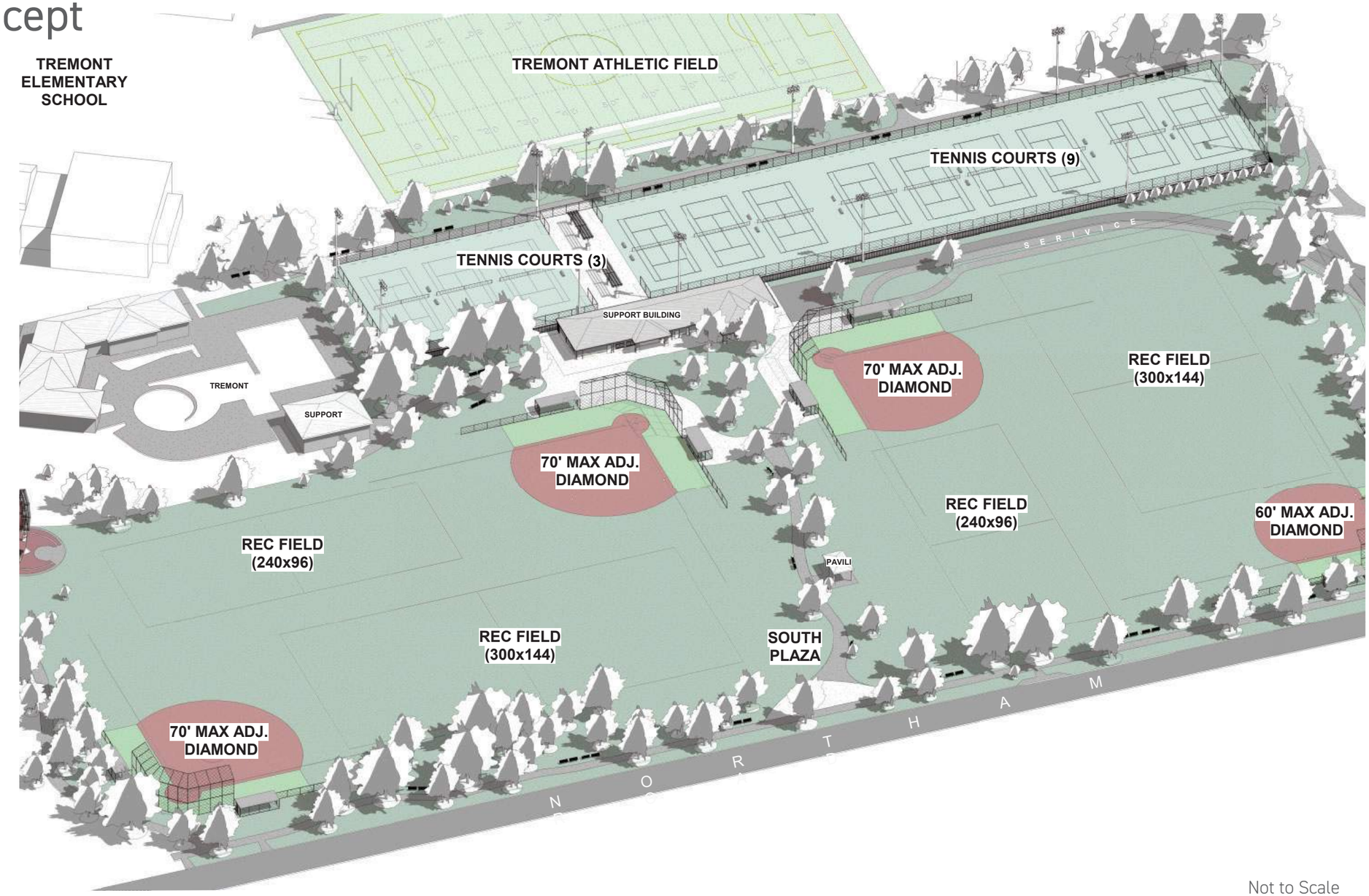
6. Negative tennis comments
   - They are used by non-residents
   - Too many courts
   - Tennis court use should be free
   - Various comments on the cost of operations

7. Positive tennis comments
   - Glad the city is studying upgrades to the tennis complex and keeping 12 courts
   - The clay tennis courts are unique to Upper Arlington
   - In favor of improving court surfacing
   - Various comments on improving tennis complex circulation

8. Other use comments
   - Need a dog park
   - Common space / flexibility for events
   - Need year round public restrooms

# Final Vision Concept

## Birds Eye View

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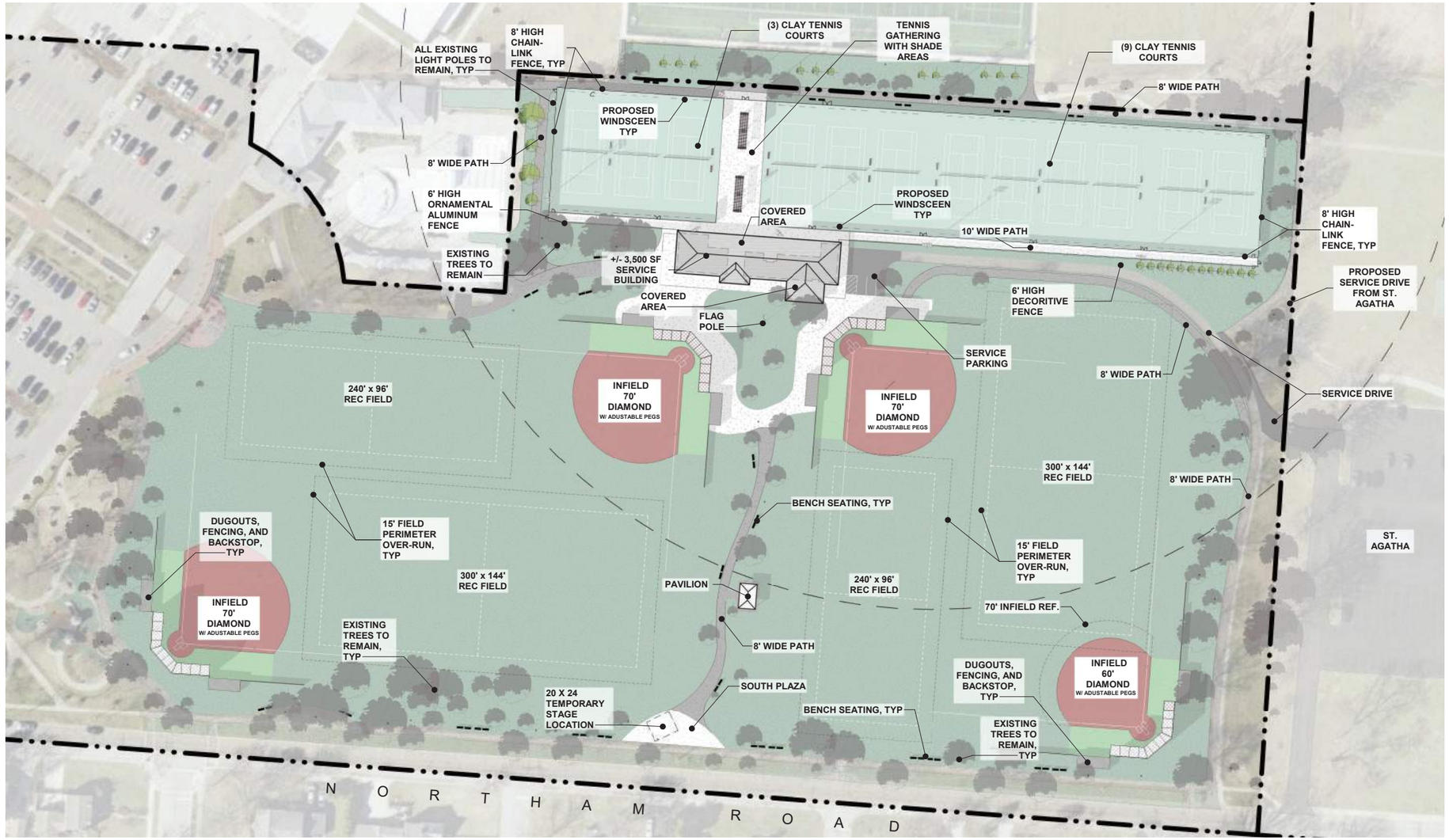
# Site Layout

After receiving all the preferences and considerations from the community MSA together with the Parks & Recreation Department developed a final vision concept.

MSA incorporated athletic fields layout Option B as this layout provides for a larger open space on the south side of the site. This creates a centralized gathering point near the service building. The open space on the south side also provides an area for potential underground detention.

The service building was designed to serve to the north and south sides also providing flexible covered areas.

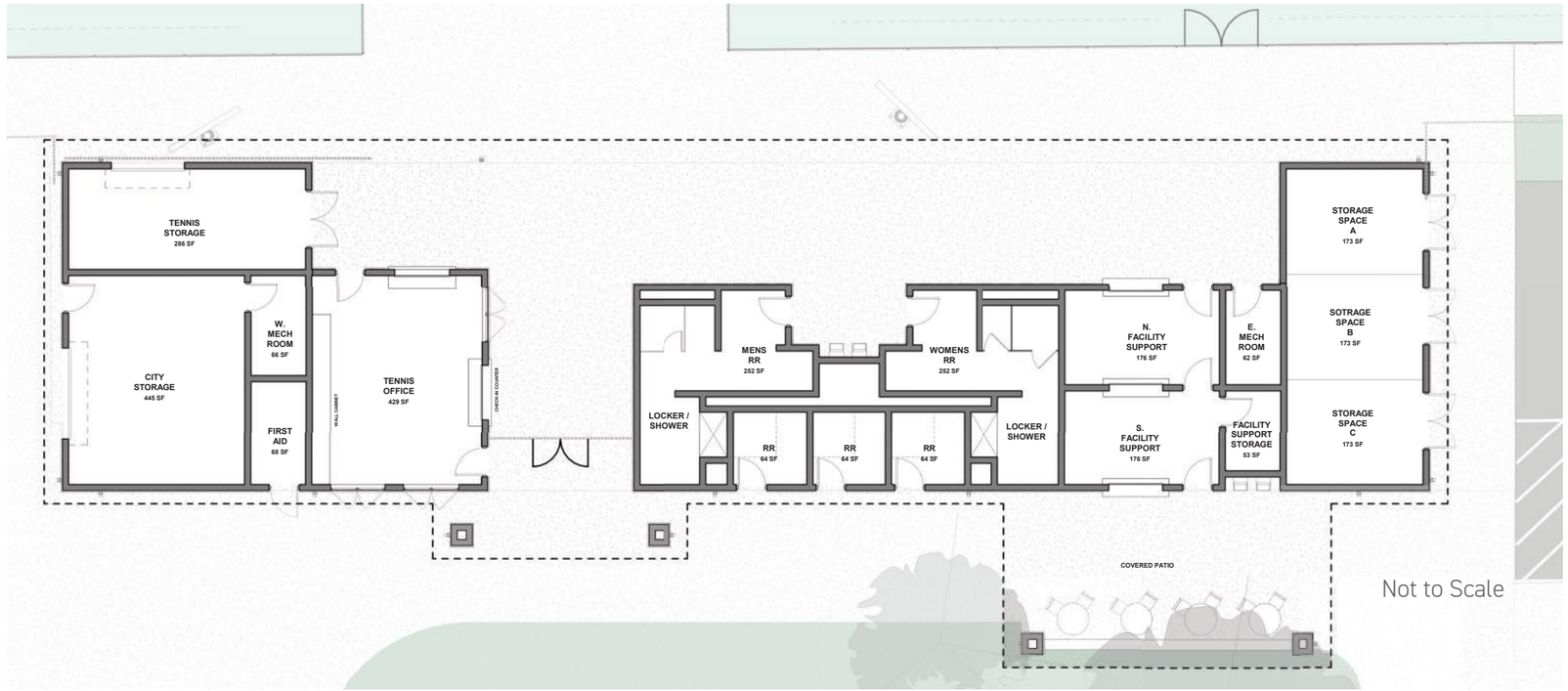


# Service Building Layout

The service building is essentially two parts. The west side serves the tennis office and storage. The east side serves restrooms, facility support to both north (tennis) side and south (park) sides. Storage areas are also provided adjacent to the service drive for multiple user groups.

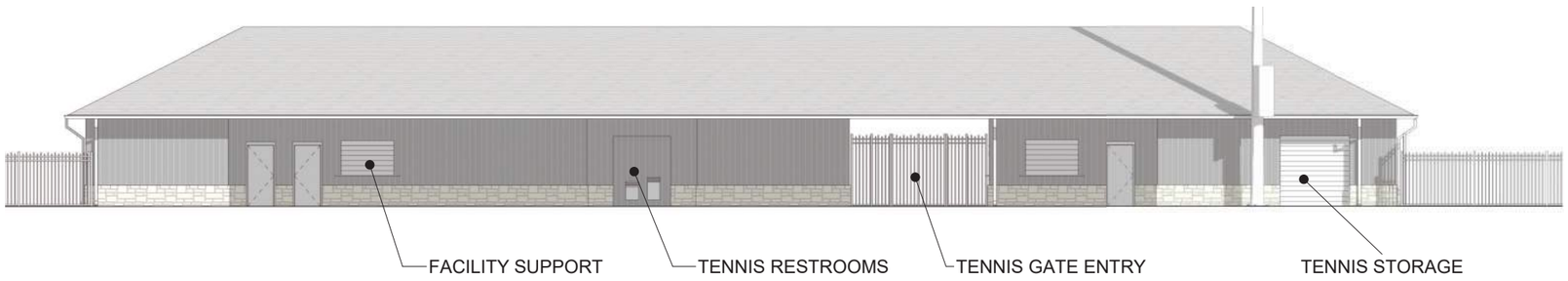
An open breezeway is provided between the two parts of the building, creating the entry for the tennis complex.

A large covered area is provided on the south side for general park use, as well as an additional covered area on the north side of the building within the tennis area.

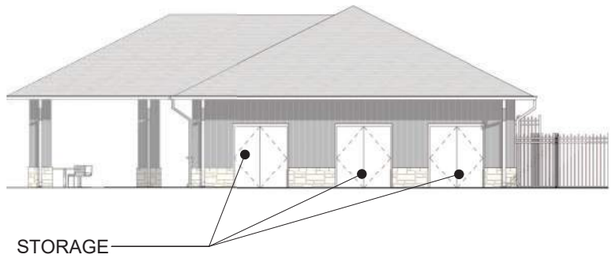



Floor plan

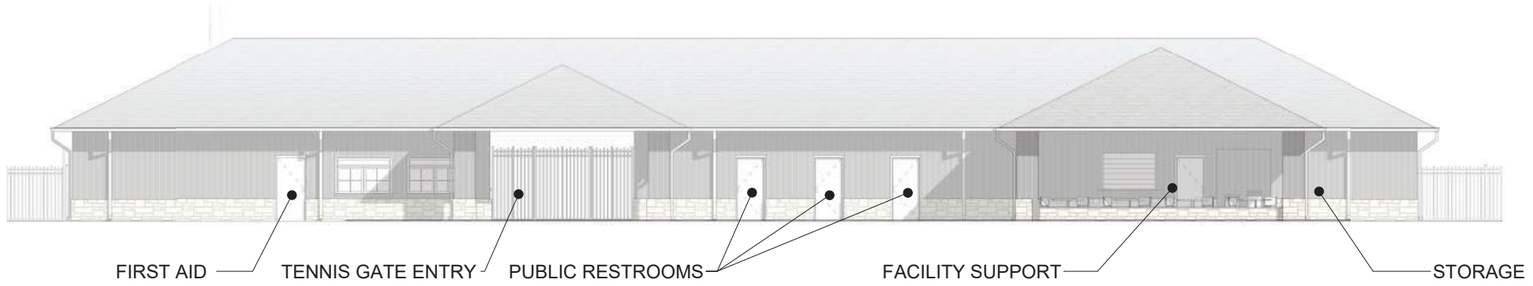
# Service Building Elevations



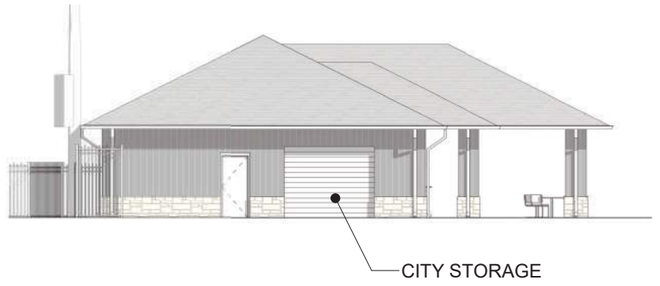

North Elevation




East Elevation




South Elevation




West Elevation

It is suggested that the exterior architectural design of the new service building be of similar architectural style of the nearby Tremont Pool complex, given the proximity to the pool building, and the desire to establish a cohesive Northam Park

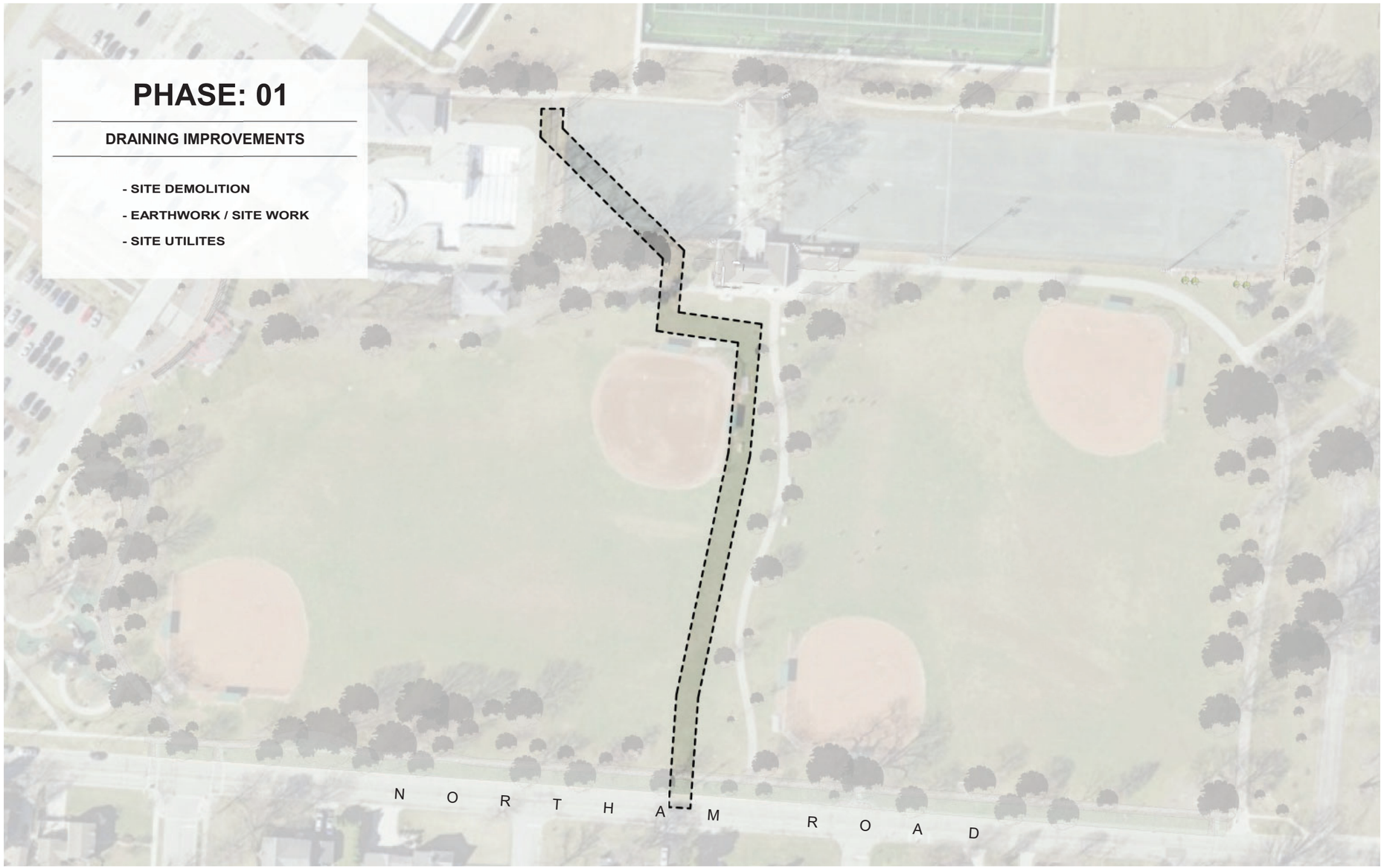
# Phasing

## Phase 01

Phase 01 is focused on establishing the primary storm sewer line that will run through the center of the site into storm connection at Northam Road. This work will consist of site clearing and demolition of areas indicated to allow proper drainage. A sliver through the tennis courts would need to be excavated to allow pipes to run underneath and then repaired. .

| Phase 1 Improvements | | | | | | |
|---|---|---|---|---|---|---|
| Component | Quantity | Unit | Low Unit | High Unit | Low | High |
| **Site Demolition** | | | | | | |
| Site Demolition | 1 | LS | | $25,000 | | $25,000 |
| Site Clearing | 1 | LS | | $20,000 | | $20,000 |
| **Earthwork / Site Work** | | | | | | |
| Flexible Pavement Subtotal | 1 | LS | | $5,000 | | $5,000 |
| Rigid Pavement Subtotal | 1 | LS | | $20,576 | | $20,576 |
| Storm Drainage Subtotal (minus underground detention) | 1 | LS | | $200,000 | | $200,000 |
| Underground Detention | 1 | LS | | $206,250 | | $206,250 |
| Tennis Court Repair | 1 | allow. | | $5,000 | | $5,000 |
| **Site Utilities** | | | | | | |
| None included | | | | | | |
| **Design Contingency** | | | | | | |
| | | | | 30% | | $137,048 |
| **Construction Costs** | | | | | | |
| General Conditions | | | | 10% | | $48,183 |
| Contractor Fee | | | | 10% | | $66,706 |
| **Phase 1 Improvements - Construction Costs** | | | | | | **$733,762** |
| **Soft Costs** | | | | | | |
| A/E Fees - Phase 1 | 1 | LS | | $140,000 | | $140,000 |
| Infrastrcture Design (included above) | | | | | | |
| Permits | 1 | LS | | $15,000 | | $15,000 |
| FF&E | 1 | allow. | | $0 | | $0 |
| **Phase 1 Improvements - TOTAL** | | | | | | **$888,762** |

*NOTE: The above estimate numbers do not include exact existing utility conditions or potential for unfavorable existing soils. The numbers also do not account for local bidding climate, economy of scale, and future cost escalations.*

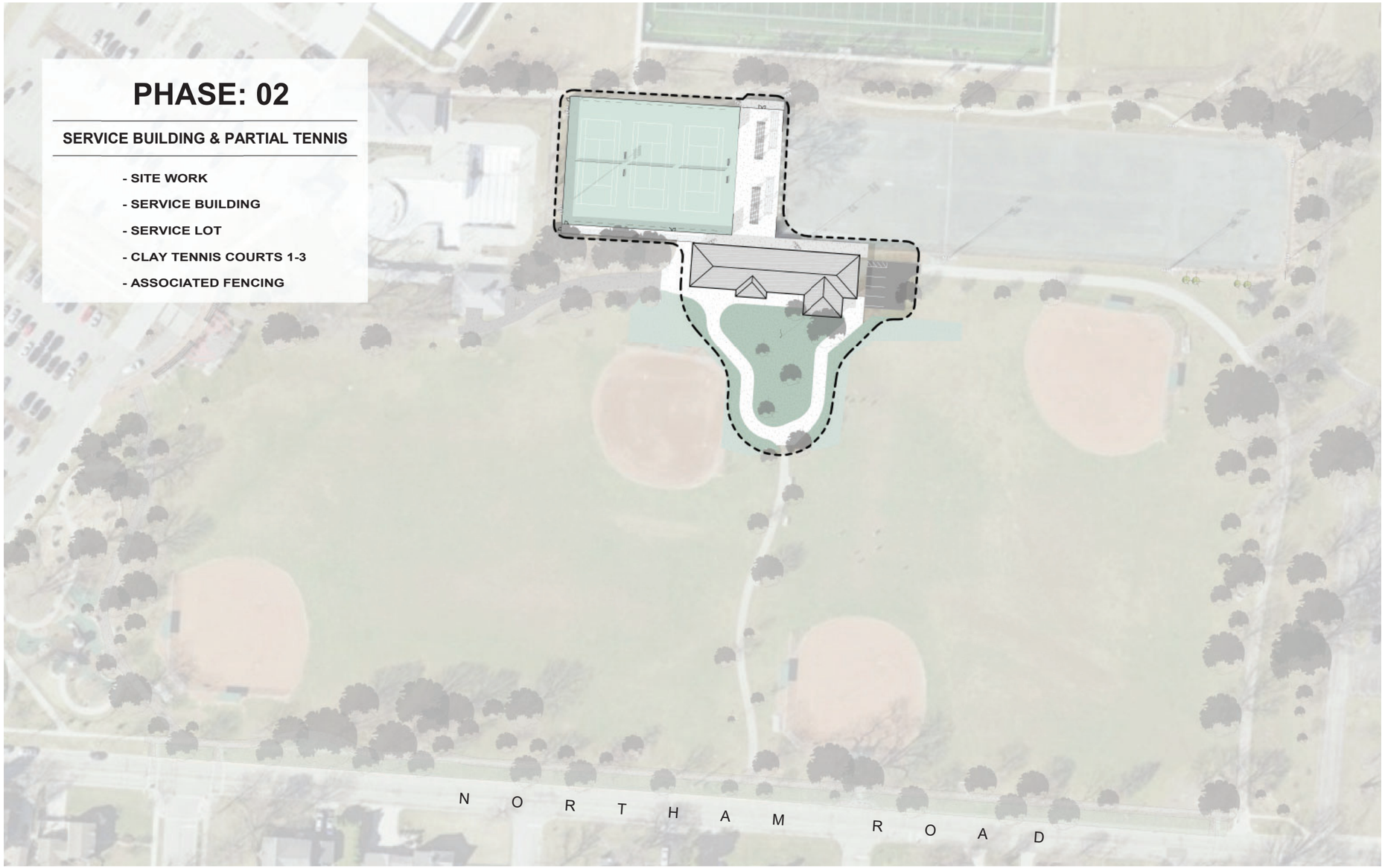

PHASE: 01
DRAINING IMPROVEMENTS
- SITE DEMOLITION
- EARTHWORK / SITE WORK
- SITE UTILITES
NORTHAM ROAD

## Phase 02

Phase 02 includes the Service Building along with a service lot that accompanies it. Additional asphalt paving and new landscape just south of the building will be implemented to complete a central loop that will tie together the athletic fields with the new service building. The renovation of three tennis courts, along with new fencing, will be included in this phase

| Phase 2 Improvements | | | | | | |
|---|---|---|---|---|---|---|
| Component | Quantity | Unit | Low Unit | High Unit | Low | High |
| **Site Demolition** | | | | | | |
| Building Clearing and Misc Demo | 1 | LS | $10,000 | $15,000 | $10,000 | $15,000 |
| Existing Tennis Courts | 1 | LS | $2,000 | $4,000 | $2,000 | $4,000 |
| **Earthwork / Site Work** | | | | | | |
| Grading | 1 | LS | $20,000 | $30,000 | $20,000 | $30,000 |
| Asphalt Paving | 1,800 | SF | $8 | $10 | $14,400 | $18,000 |
| Concrete Paving | 19,900 | SF | $9 | $12 | $179,100 | $238,800 |
| Sod | 12,000 | SF | $1 | $1 | $12,000 | $12,000 |
| Irrigation | 1 | LS | $10,000 | $15,000 | $10,000 | $15,000 |
| Trees and Landscaping | 1 | Allow | $20,000 | $25,000 | $20,000 | $25,000 |
| **Site Utilities** | | | | | | |
| Water and Sanitary Connection | 1 | LS | $60,000 | $75,000 | $60,000 | $75,000 |
| Water Service Tap Fee | 1 | LS | $26,000 | $26,000 | $26,000 | $26,000 |
| Stormwater / Infrastructure work | 1 | LS | $30,000 | $60,000 | $30,000 | $60,000 |
| Electric | 1 | LS | $15,000 | $20,000 | $15,000 | $20,000 |
| **Building** | | | | | | |
| Support Building | 3,570 | SF | $175 | $215 | $624,750 | $767,550 |
| **Tennis Courts** | | | | | | |
| Clay Tennis Court | 3 | EA | $49,500 | $60,500 | $148,500 | $181,500 |
| 8' Fence - black chainlink | 480 | LF | $45 | $48 | $21,600 | $23,040 |
| 6' Fence - black aluminum ornamental | 180 | LF | $50 | $60 | $9,000 | $10,800 |
| Gate | 6 | EA | $1,500 | $1,500 | $9,000 | $9,000 |
| Adjustment of court lighting | 1 | Allow | $5,000 | $5,000 | $5,000 | $5,000 |
| **Design Contingency** | | | | | | |
| | | | 15% | 20% | $151,988 | $258,270 |
| **Construction Costs** | | | | | | |
| General Conditions | | | 10% | | $121,635 | $153,569 |
| Contractor Fee | | | 10% | | $148,997 | $194,753 |
| Escalation | | | 3% | | $48,869 | $63,818 |
| **Phase 2 Improvements - Construction Costs** | | | | | **$1,687,839** | **$2,206,100** |
| **Soft Costs** | | | | | | |
| A/E Fees | | | 10% | | $168,784 | $220,610 |
| Permits | 1 | LS | $5,000 | | $5,000 | $5,000 |
| FF&E | 1 | allow. | $30,000 | $35,000 | $30,000 | $35,000 |
| **Phase 2 Improvements - TOTAL** | | | | | **$1,891,623** | **$2,466,710** |

*NOTE: The above estimate numbers do not include exact existing utility conditions or potential for unfavorable existing soils. The numbers also do not account for local bidding climate or economy of scale. An escalation of 3% annually has been included in Phases 2-5, assuming one phase per year.*


PHASE: 02
SERVICE BUILDING & PARTIAL TENNIS
- SITE WORK
- SERVICE BUILDING
- SERVICE LOT
- CLAY TENNIS COURTS 1-3
- ASSOCIATED FENCING
NORTHAM ROAD

## Phase 03

Phase 03 focuses on the athletic fields that are on the western half of the site. New drainage collectors will be placed that tie into the central line established during phase 01. The site will be reworked to allow new baseball fields in new locations. The open fields adjacent to the baseball diamonds also allow room for recreational fields.

| Phase 3 Improvements | | | | | | |
|---|---|---|---|---|---|---|
| Component | Quantity | Unit | Low Unit | High Unit | Low | High |
| **Site Demolition** | | | | | | |
| Site Clearing and Misc Demo | 1 | LS | $25,000 | $30,000 | $25,000 | $30,000 |
| **Earthwork / Site Work** | | | | | | |
| Grading | 1 | LS | $50,000 | $75,000 | $50,000 | $75,000 |
| Asphalt Paving | 6,500 | SF | $8 | $10 | $52,000 | $65,000 |
| Concrete Paving | 3,400 | SF | $9 | $12 | $30,600 | $40,800 |
| Sod at Field Locations | 140,000 | SF | $0.90 | $1 | $126,000 | $140,000 |
| Seed at Remaining Areas | 100,000 | SF | $0.50 | $0.50 | $50,000 | $50,000 |
| Irrigation at Fields | 2 | EA | $18,000 | $20,000 | $36,000 | $40,000 |
| Trees and Landscaping | 1 | Allow. | $20,000 | $25,000 | $20,000 | $25,000 |
| **Site Utilities** | | | | | | |
| Water Connection | 1 | LS | $15,000 | $20,000 | $15,000 | $20,000 |
| Stormwater / Infrastrcture work | 1 | LS | $180,000 | $210,000 | $180,000 | $210,000 |
| Electric | 1 | LS | $15,000 | $20,000 | $15,000 | $20,000 |
| **Ball Diamonds** | | | | | | |
| Clay Infield | 2 | EA | $20,000 | $30,000 | $40,000 | $60,000 |
| Black Vinyl Coated Chainlink Backstop | 2 | EA | $20,000 | $20,000 | $40,000 | $40,000 |
| 6' Fence - black chainlink | 360 | LF | $42 | $44 | $15,120 | $15,840 |
| Standard Dugout | 4 | EA | $18,000 | $22,000 | $72,000 | $88,000 |
| **Design Contingency** | | | | | | |
| | | | 15% | 20% | $111,258 | $177,928 |
| **Construction Costs** | | | | | | |
| General Conditions | | | 10% | | $76,672 | $91,964 |
| Contractor Fee | | | 10% | | $95,465 | $118,953 |
| Escalation | | | 6% | | $63,007 | $78,509 |
| **Phase 3 Improvements - Construction Costs** | | | | | **$1,113,122** | **$1,386,994** |
| **Soft Costs** | | | | | | |
| A/E Fees | | | 10% | | $111,312 | $138,699 |
| Permits | 1 | LS | $5,000 | | $5,000 | $5,000 |
| FF&E | 1 | allow. | $15,000 | | $15,000 | $15,000 |
| **Phase 3 Improvements - TOTAL** | | | | | **$1,244,434** | **$1,545,694** |

| Phase 3 - Visionary Add Alternates / Optional Items | | | | | | |
|---|---|---|---|---|---|---|
| **Pavilion** | | | | | | |
| Concrete pavement | 700 | SF | $8 | $10 | $5,600 | $7,000 |
| Open Shelter | 1 | LS | $30,000 | $40,000 | $30,000 | $40,000 |
| **Service Drive** | | | | | | |
| | 1 | LS | $80,000 | $120,000 | $80,000 | $120,000 |
| **Ball Diamonds - upgrade to synthetic turf** | | | | | | |
| Snythetic Turf Infield (difference to upgrade from clay) | 2 | EA | $50,000 | $50,000 | $100,000 | $100,000 |
| Concrete Curb | 450 | LF | $18 | $20 | $8,100 | $9,000 |
| Natural Grass Interface Wooden Curb | 480 | LF | $15 | $16 | $7,200 | $7,680 |
| 4" Underdrains | 1,000 | LF | $8 | $9 | $8,000 | $9,000 |
| **Irrigation at Remaining Areas** | | | | | | |
| | 1 | LS | $50,000 | $60,000 | $50,000 | $60,000 |

*NOTE: The above estimate numbers do not include exact existing utility conditions or potential for unfavorable existing soils. The numbers also do not account for local bidding climate or economy of scale. An escalation of 3% annually has been included in Phases 2-5, assuming one phase per year.*


PHASE: 03
EAST ATHLETIC FIELDS
- SITE DEMOLITION
- EARTHWORK / SITE WORK
- SITE UTILITIES
- BASEBALL DIAMONDS
N O R T H A M R O A D

## Phase 04

Phase 04 includes renovation of the nine tennis courts, as well as associated fencing, walkways, and landscaping. The pedestrian path on the north side of the tennis complex will also be included in this phase, as well as the area between the pool and the tennis courts.

| Phase 4 Improvements | | | | | | |
|---|---|---|---|---|---|---|
| Component | Quantity | Unit | Low Unit | High Unit | Low | High |
| **Site Demolition** | | | | | | |
| Existing Tennis Courts | 1 | LS | $4,000 | $6,000 | $4,000 | $6,000 |
| Misc. Site Clearning and Demo | 1 | LS | $10,000 | $15,000 | $10,000 | $15,000 |
| **Earthwork / Site Work** | | | | | | |
| Grading | 1 | LS | $10,000 | $15,000 | $10,000 | $15,000 |
| Asphalt Paving | 8,600 | SF | $8 | $10 | $68,800 | $86,000 |
| Concrete Paving | 3,500 | SF | $9 | $12 | $31,500 | $42,000 |
| Seed | 50,000 | SF | $0.50 | $0.50 | $25,000 | $25,000 |
| Trees and Landscaping | 1 | Allow | $30,000 | $35,000 | $30,000 | $35,000 |
| **Site Utilities** | | | | | | |
| Stormwater / Infrastructure work | 1 | LS | $25,000 | $35,000 | $25,000 | $35,000 |
| **Tennis Courts** | | | | | | |
| Clay Tennis Court | 12 | EA | $49,500 | $60,500 | $594,000 | $726,000 |
| 8' Fence - black chainlink | 1,110 | LF | $45 | $48 | $49,950 | $53,280 |
| 6' Fence - black aluminum ornamental | 450 | LF | $50 | $60 | $22,500 | $27,000 |
| Gate | 11 | EA | $1,500 | $1,500 | $16,500 | $16,500 |
| Adjustment of court lighting | 1 | Allow | $5,000 | $5,000 | $5,000 | $5,000 |
| **Design Contingency** | | | 15% | 20% | $133,838 | $217,356 |
| **Construction Costs** | | | | | | |
| General Conditions | | | 10% | | $102,609 | $130,414 |
| Contractor Fee | | | 10% | | $112,870 | $143,455 |
| Escalation | | | 9% | | $111,741 | $142,020 |
| **Phase 4 Improvements - Construction Costs** | | | | | **$1,353,307** | **$1,720,025** |
| **Soft Costs** | | | | | | |
| A/E Fees | | | 10% | | $135,331 | $172,002 |
| Permits | 1 | LS | $5,000 | | $5,000 | $5,000 |
| FF&E | 1 | allow. | $15,000 | $15,000 | $15,000 | $15,000 |
| **Phase 4 Improvements - TOTAL** | | | | | **$1,508,637** | **$1,912,027** |

| Phase 4 - Visionary Add Alternates / Optional Items | | | | | | |
|---|---|---|---|---|---|---|
| **Shade/trellis structure at tennis** | | | | | | |
| | 2 | EA | $10,000 | $15,000 | $20,000 | $30,000 |
| **Windscreens** | | | | | | |
| | 6,480 | SF | $2 | $3 | $12,960 | $19,440 |

*NOTE: The above estimate numbers do not include exact existing utility conditions or potential for unfavorable existing soils. The numbers also do not account for local bidding climate or economy of scale. An escalation of 3% annually has been included in Phases 2-5, assuming one phase per year.*


PHASE: 04
TENNIS COURTS
- SITE DEMOLITION
- EARTHWORK / SITE WORK
- SITE UTILITIES
- CLAY TENNIS COURTS 4 - 12
- ASSOCIATED FENCING
NORTHAM ROAD

## Phase 05

Phase 05 completes the vision plan with work to the eastern half of the site consisting of two baseball fields and recreation fields. Similar to phase 03, the baseball fields will receive new dugouts, infield, backstops, and fencing, with improvements made to drainage and infrastructure design throughout the area of work.

| Phase 5 Improvements | | | | | | |
|---|---|---|---|---|---|---|
| Component | Quantity | Unit | Low Unit | High Unit | Low | High |
| **Site Demolition** | | | | | | |
| Site Clearing and Misc Demo | 1 | LS | $25,000 | $30,000 | $25,000 | $30,000 |
| **Earthwork / Site Work** | | | | | | |
| Grading | 1 | LS | $50,000 | $75,000 | $50,000 | $75,000 |
| Concrete Paving | 2,000 | SF | $9 | $12 | $18,000 | $24,000 |
| Sod at Field Locations | 140,000 | SF | $0.90 | $1 | $126,000 | $140,000 |
| Seed at Remaining Areas | 100,000 | SF | $0.50 | $0.50 | $50,000 | $50,000 |
| Irrigation at Fields | 2 | EA | $18,000 | $20,000 | $36,000 | $40,000 |
| Trees and Landscaping | 1 | Allow. | $20,000 | $25,000 | $20,000 | $25,000 |
| **Site Utilities** | | | | | | |
| Water Connection | 1 | LS | $15,000 | $20,000 | $15,000 | $20,000 |
| Stormwater / Infrastrcture work | 1 | LS | $170,000 | $200,000 | $170,000 | $200,000 |
| Electric | 1 | LS | $15,000 | $20,000 | $15,000 | $20,000 |
| **Ball Diamonds** | | | | | | |
| Clay Infield | 2 | EA | $20,000 | $30,000 | $40,000 | $60,000 |
| Black Vinyl Coated Chainlink Backstop | 2 | EA | $20,000 | $20,000 | $40,000 | $40,000 |
| 6' Fence - black chainlink | 360 | LF | $42 | $44 | $15,120 | $15,840 |
| Standard Dugout | 4 | EA | $18,000 | $22,000 | $72,000 | $88,000 |
| **Design Contingency** | | | | | | |
| | | | 15% | 20% | $100,068 | $159,568 |
| **Construction Costs** | | | | | | |
| General Conditions | | | 10% | | $69,212 | $82,784 |
| Contractor Fee | | | 10% | | $86,140 | $107,019 |
| Escalation | | | 12% | | $113,705 | $141,265 |
| **Phase 5 Improvements - Construction Costs** | | | | | **$1,061,245** | **$1,318,477** |
| **Soft Costs** | | | | | | |
| A/E Fees | | | 10% | | $106,124 | $131,848 |
| Permits | 1 | LS | $5,000 | | $5,000 | $5,000 |
| FF&E | 1 | allow. | $15,000 | | $15,000 | $15,000 |
| **Phase 5 Improvements - TOTAL** | | | | | **$1,187,369** | **$1,470,324** |

| Phase 5 - Visionary Add Alternates / Optional Items | | | | | | |
|---|---|---|---|---|---|---|
| **Ball Diamonds - upgrade to synthetic turf** | | | | | | |
| Snythetic Turf Infield (difference to upgrade from clay) | 2 | EA | $50,000 | $50,000 | $100,000 | $100,000 |
| Concrete Curb | 450 | LF | $18 | $20 | $8,100 | $9,000 |
| Natural Grass Interface Wooden Curb | 480 | LF | $15 | $16 | $7,200 | $7,680 |
| 4" Underdrains | 1,000 | LF | $8 | $9 | $8,000 | $9,000 |
| **Irrigation at Remaining Areas** | | | | | | |
| | 1 | LS | $50,000 | $60,000 | $50,000 | $60,000 |

*NOTE: The above estimate numbers do not include exact existing utility conditions or potential for unfavorable existing soils. The numbers also do not account for local bidding climate or economy of scale. An escalation of 3% annually has been included in Phases 2-5, assuming one phase per year.*


PHASE: 05
WEST ATHLETIC FIELD
- EARTHWORK / SITE WORK
- SITE UTILITIES
- BASEBALL DIAMONDS
NORTHAM ROAD

# Reference Narratives

## Clay Tennis Courts

The Master Plan envisions to rebuild all 12 existing clay courts. Given the poor drainage of the existing courts, the plan assumes that the new courts will be built on top of the existing courts. The existing clay would be removed, but the base layer would remain. The new courts will be approximately 5.5" above the existing courts, assuming a new court section of 5.5" of screenings, and 1" of clay surface. The existing courts have above ground irrigation - new and improved above ground irrigation could be provided. Alternatively, the courts could consider a subsurface irrigation system comprised of 6 cells (Har-Tru HydroCourt or similar). Each cell will have liner, irrigation water piping, and screenings. Due to the layout of the facility, it is envisioned that the courts would slope end-to-end rather than side to side. This will remove surface rainwater in the shortest distance (120') and eliminate the need for periodic trench drains between the courts (which would require additional space between the courts). It is currently envisioned that the courts will slope south at 0.28% (1" in 30'). All perimeter curbing, net posts, and fencing will also be replaced.

It is recommended that a new water service line be brought to the tennis area in Phase 02 to serve the courts and the new service buidling.

## Soils Analysis / Natural Turf Fields

Soil cores were taken across the east and west half of the complex separately. The results for both halves were similar. Approximately 10 cores (3/4" in diameter and 6 inches deep) were taken on each half. The organics and roots were removed from the samples. The 10 samples were then mixed together to form a representative mix, which was sent to Spectrum Analytics soil test lab in Washington Courthouse. Fertilizer recommendations are supplied as part of the nutrient analysis. Natural grass recommendations include working to achieve good surface drainage. Typically 1.5% slope is viewed as an ideal slope to adequately move surface water off the playing field during a rain event. Irrigation of the natural grass is also recommended. Irrigation will help reduce stress during dry periods, and help it recover after an event. Usage hours on the turf should also watched to not over wear the grass. A good maintenance program is of course part of a good natural grass sports field. Subsurface drainage can also be helpful to improve the playing surface.

# Survey Drawings

## LEGEND

(applicable for all survey sheets)

- Building/Wall
- Curb
- Curb and Gutter
- Pavement/Walk
- Index Contour
- Intermediate Contour
- Water line
- Gas Line
- Sanitary Sewer
- Storm Sewer
- Manhole
- Open Grate Manhole or Curb Inlet
- Valve
- Underground Electric line
- Electric Manhole
- Underground Telephone
- Underground Fiber Optic
- Telephone Pole
- Telephone Manhole
- Power Pole
- Light Pole
- Fence
- Right of Way Line
- Easement Line
- Property Line
- Original Subdivision Lot Lines
- Steam Manhole
- Further route of utility unknown
- Tree Line/Shrub Line
- Bushes
- Trees
- Electric Pull Box
- Telephone Pull Box/Pedestal
- Traffic Pull Box
- Unknown Utility Pull Box
- Lighting Pull Box
- Fiber Optic Pull Box
- Air Conditioning Unit
- Area Drain
- Clean Out
- Down Spout
- Ground Light
- Siamese/Test Header
- Fire Hydrant
- Post Indicator Valve
- Sprinkler Head
- Gas Line Marker
- Telephone Line Marker
- Water Line Marker
- Top of Casting Elevation
- Information Obtained From Record Plan
- Abandoned Utility
- Spot Elevation
- Top of Curb Elevation
- Bottom of Curb Elevation
- Control Point
- Traffic Bollard
- Picnic Table
- Trash Can
- Bench
- Handicap Ramp
- Sign
- Flag Pole
- Concrete Pavement, Walk, Slab
- Brick Walk

Not all symbols necessarily used

## NOTES:

1. All underground utility locations are shown as accurately as possible based on surface evidence (valves and manholes), markings found in the field, and/or record plans received from the owner or utility companies. Items noted (rec) were obtained from existing plans. Utility locations are not necessarily complete or correct. Any utility in close proximity to proposed work should be "potholed" for exact location prior to construction. OUPS Tickets # A005900226-00A, A005900228-00A, A005900235-00A & A005900237-00A.

2. Property and easement lines shown hereon, if any, are from a combination of records, GIS and evidence located in the field and are not to be construed as a boundary survey pursuant the OAC 4733-37. A title report, containing documentation or easements of record was not provided. Not all easements affecting the property may be shown. Property and easement lines are for informational purposes only and should not be used in conjunction with the development of design drawings.

3. The elevations on this survey are based on NAVD 88. Record drawings of buildings and infrastructure may exist having a differing datum. Exercise caution when utilizing this survey by correlating record drawings and proposed work with survey information shown on this drawing.

4. Benchmarks and control points shown on this survey may have been disturbed, since the completion of this survey. Verify that existing monumentation correlates with data shown on this survey prior to use.

5. Utilities noted (Ab) are denoted as such per record plan and may have been abandoned or removed. Their existence and/or status has not been verified.

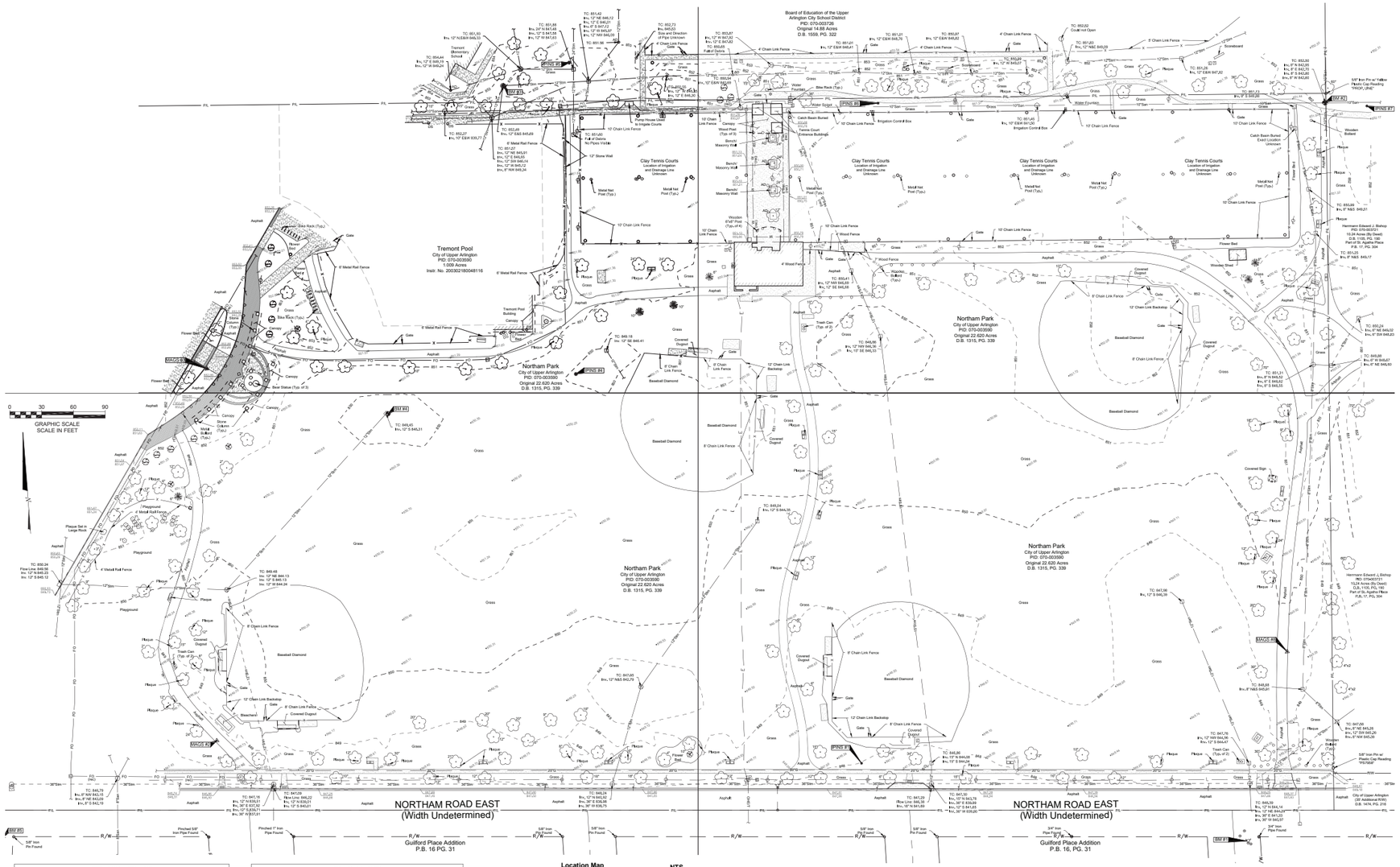
6. Buildings are located from the surveyed at grade edge. Location of the interior and underground structural footprint has not been verified. Due to possible variations in building exterior above the at grade edge, the building location should be used for site plan use only.

8. Sewer sizes shown are based on an evaluation of record plan information and observation from the manhole casting at grade. Due to manhole depth and safety restrictions entering manhole, sizes shown are approximate.

9. The lots delineated on this plat are found on non-printed F.E.M.A. community panel No. 39049C0164K & 39049C0168K dated 06/17/08. The property is located in Zone X and are therefore not in a flood hazard area.

10. Trees shown do not indicate dripline or root area.

11. Building overhangs are in an approximate location.




### CONTROL POINTS

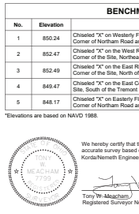
| No. | Northing | Easting | Elevation | Description |
|---|---|---|---|---|
| 1 | 733404.846 | 1810503.228 | 847.98 | 5/8"x30" Iron Pin Set w/ Yellow Plastic Cap |
| 2 | 733472.393 | 1809897.433 | 848.83 | Mag Nail |
| 3 | 733823.179 | 1809914.808 | 852.71 | Mag Nail |
| 4 | 733791.706 | 1810261.806 | 849.77 | 5/8"x30" Iron Pin Set w/ Yellow Plastic Cap |
| 5 | 734085.448 | 1810277.833 | 851.84 | 5/8"x30" Iron Pin Set w/ Yellow Plastic Cap |
| 6 | 734024.970 | 1810566.258 | 851.11 | 5/8"x30" Iron Pin Set w/ Yellow Plastic Cap |
| 7 | 733987.194 | 1811026.404 | 852.19 | 5/8"x30" Iron Pin Set w/ Yellow Plastic Cap |
| 8 | 733479.309 | 1810912.210 | 849.74 | Mag Nail |

*The project is based on State Plane Coordinates Ohio South Zone NAD 83 with 2011 NGRS adjustment.

### BENCHMARKS

| No. | Elevation | Description |
|---|---|---|
| 1 | 850.24 | Chiseled "X" on Westerly Flange Bolt of Fire Hydrant Located at the Southeast Corner of Northam Road and Henthorn Road |
| 2 | 852.47 | Chiseled "X" on the West Rim of a Sanitary Manhole Located at the Northeast Corner of the Site, Northeast of the Tennis Courts |
| 3 | 852.49 | Chiseled "X" on the East Rim of a Storm Manhole Located at the Northwest Corner of the Site, North of the Tremont Pool |
| 4 | 849.47 | Chiseled "X" on the East Corner of a Catch Basin Rim Located Central to the Site, South of the Tremont Pool |
| 5 | 848.17 | Chiseled "X" on Easterly Flange Bolt of Fire Hydrant Located at the Southeast Corner of Northam Road and Kent Road |

*Elevations are based on NAVD 1988.




We hereby certify that this drawing is representative of a true and accurate survey based on field and record observations made by Korda/Nemeth Engineering, Inc.

Tony W. Meacham
Registered Surveyor No. 7799

04/06/2020
Date

Location Map

NTS


Korda/Nemeth Engineering, Inc - Consulting Engineers
6640 Riverside Dr., Suite 500 Dublin, Ohio 43017-5129
TEL 614-322-9580 FAX 614-322-9585 WEB www.korda.com

**TOPOGRAPHIC SURVEY**
**NORTHAM PARK**
**CITY OF UPPER ARLINGTON**
**FRANKLIN COUNTY**
**OHIO**

OHIO Utilities Protection SERVICE
Click, Call or Tap Before You Dig

| FIELD | DRAWN | CHECKED | JOB NO. | DATE | SCALE | SHEET NUMBER |
|---|---|---|---|---|---|---|
| JLL | DKS | TWM | 2019-0019 | 04/06/2020 | 1" = 30' | TS2 |

# Soil Test Results

REPORT TO: 27485
THE KLEINGERS GROUP
6219 CENTRE PARK DR
WEST CHESTER, OH 45069

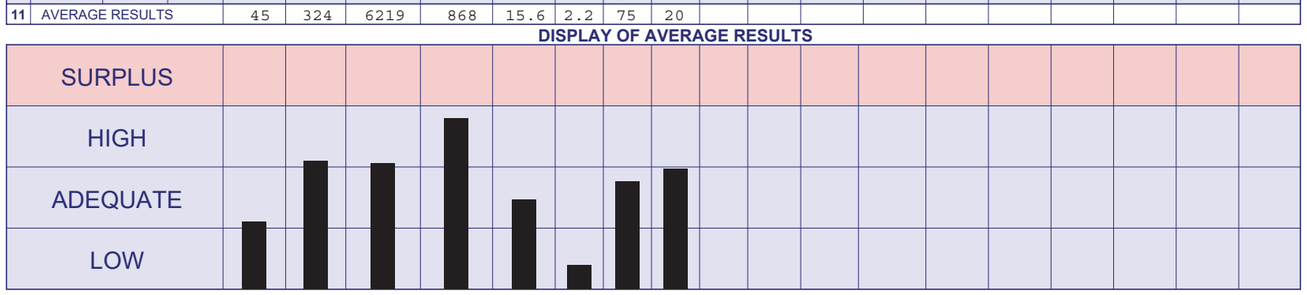
## TURF AND ORNAMENTAL
## SOIL TEST AND RECOMMENDATION REPORT

SUBMITTED BY/FOR: CRAIG HONKOMP
PO: 140248005
09/09/2020

Spectrum Analytic
1087 Jamison Road NW
Washington Court House, OH 43160-8748
www.spectrumanalytic.com

| Line Number | | RESULTS OF ANALYSIS | | | | | | CALCULATED VALUES | | | | | | RESULTS OF ANALYSIS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Soil pH | Buffer pH | Pounds per Acre Available Nutrient | | | | CEC | % Base Saturation | | | | | Pounds per Acre Available Nutrient | | | | | Soluble Salts mmhos/cm | O.M. % | | |
| | LAB NO | | | P | K | Ca | Mg | | K | Ca | Mg | H | Na | Fe | Mn | Zn | Cu | Na | | | |
| 1 | B05803 | 7.3 | | 42 | 266 | 6428 | 728 | 15.0 | 1.9 | 80 | 18 | | | | | | | | | | | |
| 2 | B05804 | 7.2 | | 48 | 382 | 6010 | 1008 | 16.1 | 2.5 | 70 | 23 | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | AVERAGE RESULTS | | | 45 | 324 | 6219 | 868 | 15.6 | 2.2 | 75 | 20 | | | | | | | | | | | |

### DISPLAY OF AVERAGE RESULTS




| Line Number | SAMPLE INFORMATION | | | | FERTILIZER RECOMMENDATIONS IN LBS PER 1000 SQ FT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SAMPLE IDENTIFICATION | PLANT TYPE | AREA TYPE | MAINT LEVEL | LIME | Type | NITROGEN | Freq | P2O5 | K2O | Mg | Fe | Mn | Zn |
| 1 | EAST FIELD | COOL SEASON MIX | LAWN | MED. | 0 | | 3.00-4.50 | S | 1.00 | 0.50 | | | | |
| 2 | WEST FIELD | COOL SEASON MIX | LAWN | MED. | 0 | | 3.00-4.50 | S | 0.50 | 0.00 | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | |
| 11 | RECOMMENDATIONS FOR AVERAGE RESULTS | | | | 0 | | 3.00-4.50 | S | 0.75 | 0.25 | 0.00 | 0.00 | 0.00 | 0.00 |

Analyzed by Spectrum Analytic, Inc. For help understanding your tests, go to https://spectrumanalytic.com/help/

REPORT TO: 27485
THE KLEINGERS GROUP
6219 CENTRE PARK DR
WEST CHESTER, OH 45069

TURF AND ORNAMENTAL
SOIL TEST AND RECOMMENDATION REPORT

SUBMITTED BY/FOR: CRAIG HONKOMP
PO: 140248005
09/09/2020

Spectrum Analytic
1087 Jamison Road NW
Washington Court House, OH 43160-8748
www.spectrumanalytic.com

| Line Number | | RESULTS OF ANALYSIS | | | | | | CALCULATED VALUES | | | | | | RESULTS OF ANALYSIS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| | LAB NO | | | P | K | Ca | Mg | | K | Ca | Mg | H | Na | Fe | Mn | Zn | Cu | Na | | | |
| 1 | B05803 | 7.3 | | 42 | 266 | 6428 | 728 | 15.0 | 1.9 | 80 | 18 | | | | | | | | | | | |
| 2 | B05804 | 7.2 | | 48 | 382 | 6010 | 1008 | 16.1 | 2.5 | 70 | 23 | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | | | | |
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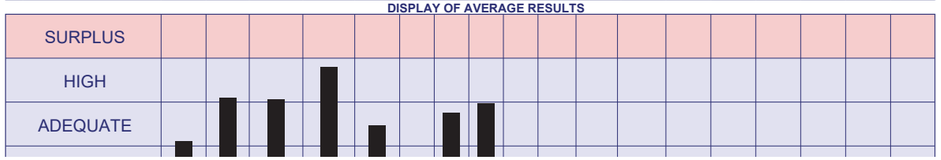
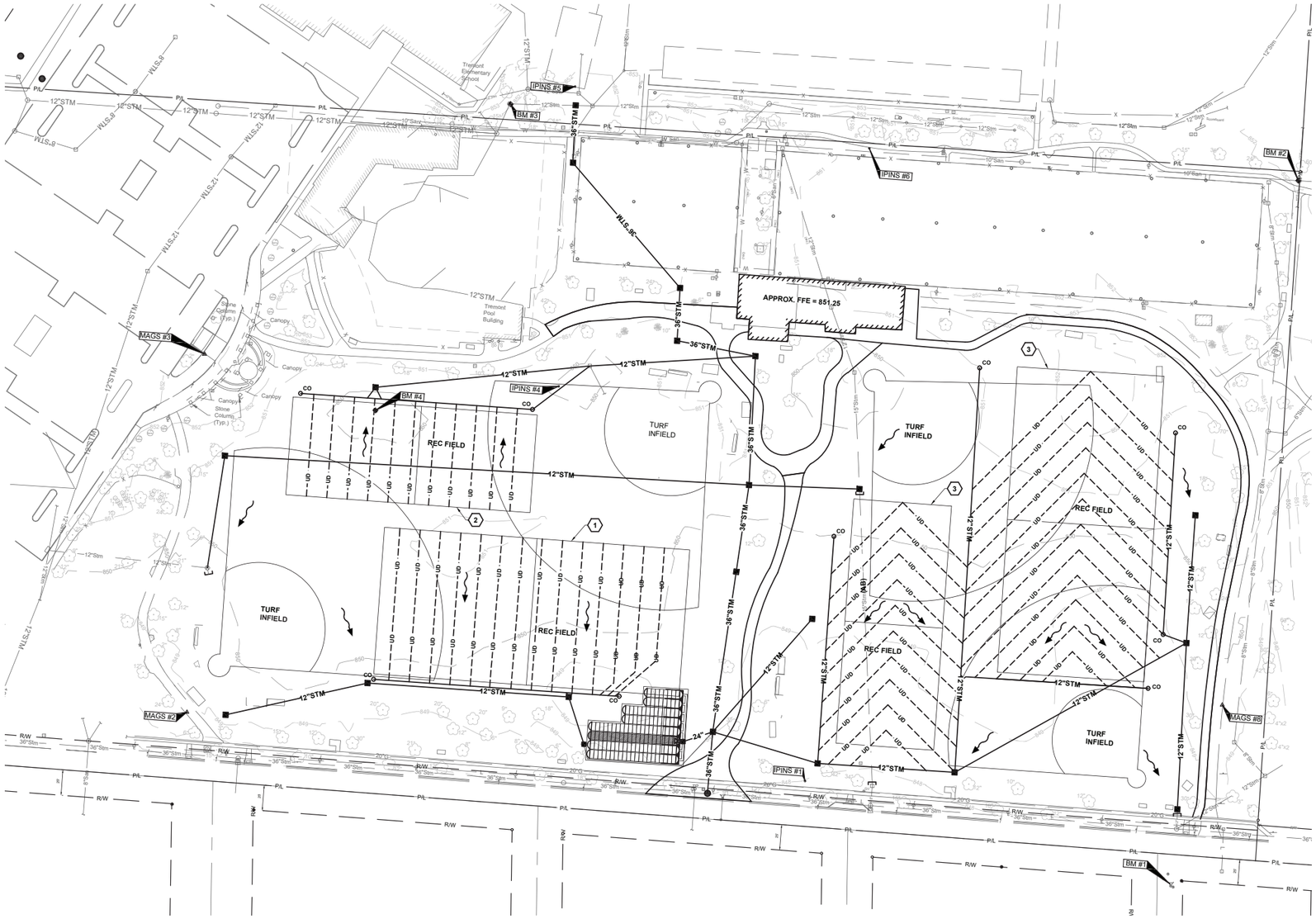
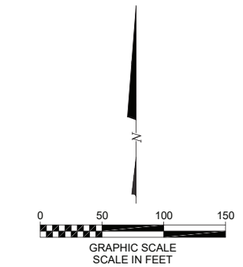
| 10 | | | | | | | | | | | | | | | | | | | | | | |
| 11 | AVERAGE RESULTS | | | 45 | 324 | 6219 | 868 | 15.6 | 2.2 | 75 | 20 | | | | | | | | | | | |

### DISPLAY OF AVERAGE RESULTS






**LEGEND**

**EXISTING**

REFER TO SHEET TS1

**PROPOSED**

- BUILDING/WALL
- STM — STORM SEWER
- CATCH BASIN
- MANHOLE
- REMOVE & REPLACE EXISTING TREE
- CUT AND PLUG EXISTING UTILITY
- (AB) — ABANDON EXISTING UTILITY
- FLOW DIRECTION ARROW

**(X) CODED NOTES:**

1. GRADING RECOMMENDATION: RECREATION FIELD SHOULD DRAIN FROM NORTH TO SOUTH SIMILAR TO EXISTING CONDITIONS WITH 1% MINIMUM SLOPE.
2. GRADING RECOMMENDATION: RECREATION FIELD SHOULD DRAIN FROM SOUTH TO NORTH SIMILAR TO EXISTING CONDITIONS WITH 1% MINIMUM SLOPE.
3. GRADING RECOMMENDATION: RECREATION FIELD SHOULD BE CROWNED IN THE CENTER OF THE FIELD AND DRAIN TO THE WEST AND EAST FROM THE CENTER. THE FIELD SHOULD ALSO DRAIN FROM NORTH TO SOUTH SIMILAR TO EXISTING CONDITIONS WITH 1% MINIMUM SLOPE.

# Phase 01 - Master Drainage Plan

KORDA
KORDA/NEMETH ENGINEERING
1650 WATERMARK DRIVE
SUITE 200
COLUMBUS, OHIO 43215

DRAWN BY: CWX
DESIGNED BY: XXW
CHECKED BY: XMK
PROJECT NUMBER: 2021-4005

KORDA Korda/Nemeth Engineering, Inc - Consulting Engineers
1650 Watermark Drive, Suite 200 - Columbus, Ohio 43215-7910
TEL 614-487-1650 - FAX 614-487-1651 - WEB www.korda.com

**MASTER DRAINAGE PLAN**

| DESIGNED | DRAWN | CHECKED | DATE | SCALE | SHEET NUMBER |
|---|---|---|---|---|---|
| KORDA | KORDA | KORDA | 9/6/2021 | NTS | 1 |

# VISION